A SOCIOLINGUISTIC STUDY OF BITBURGER PLATT GERMAN

by

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STATEMENT OF DISSERTATION APPROVAL

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ABSTRACT

Bitburger Platt, spoken in the Eifel region of western Germany, exhibits a merger of the Standard German (d) and (t) sounds, the reflexes of West Germanic *ð and *d, respectively. A chain shift yielded the modern Standard German variants. Biburger Platt, however, did not follow through with the first phase of this shift; rather, the two sounds were merged into [d] in the dialect (Veith, 1999). As an example, the Standard German phrase *du tust* 'you do (cognate to English thou doest)' is realized in Bitburger Platt as [dʊ dɛjs].

Bitburg is a town where many (if not most) residents are undergoing or have recently undergone a transition from a home-based, agrarian lifestyle to one requiring a commute to an urban center and more contact with nonlocals. Such a transition has been shown by other studies (Hofmann, 1963, Besch, 1981, Lenz, 2003) to go hand-in-hand with language shift, specifically a shift from the use of base dialects (basilects) to regional colloquial varieties that lie on a continuum between the base dialect and the standard and exhibit features of both.

The effects of situational and social factors on one's language use have long been attested. Labov (1963, 1966) mainstreamed the discipline of studying such variation in language, but others before his time showed awareness of it as well (Viëtor, 1875, Wegener, 1891). A sociolinguistic study can reveal much about a particular speech

community, ranging from qualitative information on the community's attitudes toward their language to quantifiable data that reveal how the individual community members actually speak. This study focuses heavily on the latter, specifically investigating correlations between participants' age, gender, and recording situation and their articulation of the alveolar stop consonants (d) and (t).

Participants first took part in recorded interviews with me, and then in a conversation with a close friend or family member, during which I was not present. Their recordings were subsequently searched for all tokens with Standard German (d) and (t) correspondences in initial and medial position. Those tokens in initial position underwent analysis for *voice onset time* (VOT) and *harmonic difference* (H1-H2), both proven to be acoustic correlates to fortis/lenis contrasts (Lisker and Abramson, 1964, Jessen, 1996). Medial tokens underwent analysis for the parameter of *closure duration*, also shown to be a fortis/lenis correlate.

Results indicate that participants show an overwhelming preference for merged variants in conversational speech – the indicator of dialecticity. In interview speech, however, the fortis/lenis contrast is maintained by all but the older men, a likely consequence of changing linguistic norms in the community.

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ACKNOWLEDGEMENTS

I would first like to thank my wife, Andrea, who gave me the love, support and technical assistance I needed to finish this dissertation. Next, a measure of gratitude is due to Jeff, my statistician: his contribution to this project was indispensable. I would also like to thank my committee members for their unwavering support and guidance throughout. Finally, I would like to acknowledge the people of Wiersdorf, especially the Lehnens, who housed and fed me and offered assistance in finding participants. Herzlichen Dank!

CHAPTER 1

INTRODUCTION

Linguistic variation in the German-speaking world has long been of interest to philologists, dialectologists, and those in other subfields of linguistics. As many of the German dialects are now endangered or already extinct (all unfortunate examples of the worldwide mass extinction of languages (Krauss, 1992)), it is now all the more important that linguists document and investigate them. This study investigates the speech patterns of the residents of a handful of villages northwest of Bitburg, a town in the far-western reaches of the Rhineland-Palatinate province. Many, if not most, of the families in these villages are undergoing or have already undergone a transition from a home-based, agrarian lifestyle to one requiring a commute to an urban center and much contact with nonlocals, a transition shown by other studies (Hofmann, 1963; Besch, 1981; Milroy, 1985) to go hand-in-hand with language shift.

My grounds for selecting this speech community for research are not solely personal. Though my family has had extensive contact with many members of this community since my father's deployment to Bitburg Air Base in the late 1980s (a reality that has indeed facilitated this fieldwork), several other factors justify a study of the Bitburg area. Apart from the transitional nature of the community's day-to-day lifestyle, which the aforementioned studies have shown to correlate with a fluid and dynamic

linguistic situation, the community is geographically situated in a region of Germany that would also best be described as transitional. The town of Bitburg lies in a crossover zone between the Low German varieties to the north and the High German varieties to the South, exhibiting features of both major varieties, as well as some other traits unique to the area.

Besides its interesting position within the German continuum, Bitburg also lies within a short distance of the Romance/Germanic border and has historically belonged to different nations, including Luxembourg, leading to hundreds of French loanwords being adopted into the common lexicon. Thus, due to factors both external and internal to German, a multiplicity of phonological, and morphological, and lexical isoglosses crisscross the area, a fact which dialect geographers and dialectologists have long since noted. For historical linguists and phonologists, a large number of linguistic phenomena present themselves in this region, many of which have limited or uncertain explanations, and the opportunities to investigate many of them are waning as many communities abandon features of the basilect (i.e. maximally dialectal speech) and use more regiolectal (regional nonstandard varieties) or colloquial Standard German.

Bitburger Platt is still relatively viable when compared to most other German dialects. Shown in Figure 1.1 is a map of the relative dialecticity (i.e. linguistic distance from standard language) in the province of Rhineland-Palatinate, taken by Lenz from the Middle Rheine Language Atlas; Lenz's arrow points to the village of Wittlich, the seat of Bitburg's neighboring *Kreis* (the German equivalent of an American 'county'), while my addition of the red arrow and concentric circles gives the location of Bitburg. According to the map, Wittlich lies in an area where the phonetic differences between the standard

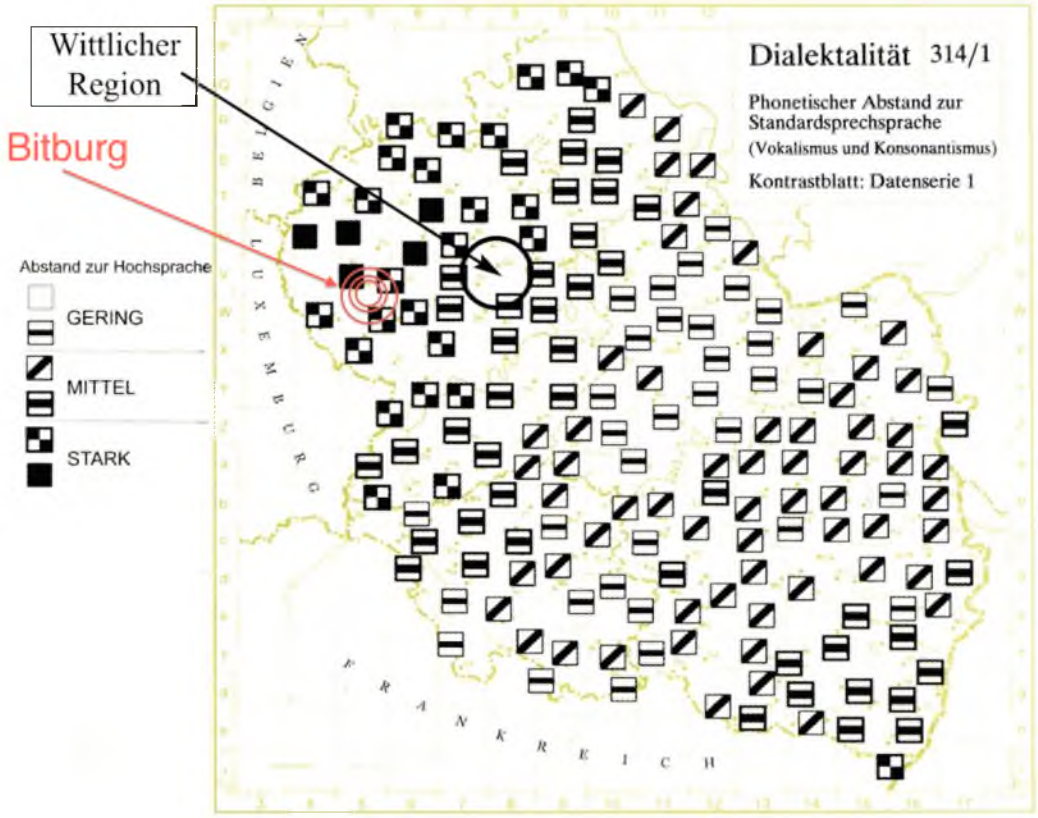

Figure 1.1: Map of relative dialecticity in Rhineland-Palatinate province

language and the vernacular are moderate to strong, while Bitburg's differences from the standard are strong to very strong.

While the sociolinguistic dynamics of the town of Wittlich have been recently investigated (Lenz, 2003), Bitburg has, to my knowledge, no such history of sociolinguistic work: a gap this study seeks to fill. In addition, it is my hope that this study will introduce the linguistic community to the fascinating language dynamics of this German frontier area, inciting further studies and investigations, not just in dialectology or sociolinguistics, but in all relevant fields, including language documentation.

The effects of situational and social factors on one's language use have long been attested. Labov (1963, 1966) mainstreamed the discipline of studying such variation in language, but others before his time showed awareness of it as well (Viëtor, 1875; Wegener, 1891). A sociolinguistic study can reveal much about a particular speech community, ranging from qualitative information on the community's attitudes toward their language to quantifiable data that reveal how the individual community members actually speak. This study focuses heavily on the latter, specifically investigating correlations between alveolar stop consonants and the participants' age, gender, and situation (interview or conversation) in which they were being recorded. Studies of this nature can benefit not only the field of linguistics but also the people of the speech community: Bitburger Platt, like most German dialects, is endangered, and knowledge about the community's language dynamics, as well as the symptoms and causes of language shift or death (Gal, 1978; Dorian, 1981; Campbell and Muntzel, 1989) could be used to recognize it early and help reverse it, if the community desires.

This dissertation is organized as follows. Chapter 2 gives an overview of early dialectological work in Germany, presents the framework of sociolinguistics and other contemporary work, and discusses situation, gender, and age (the independent variables). Chapter 3 provides a sketch of the linguistic classification of German, shows where the Bitburger Platt dialect falls in, gives a historical overview of German (d) and (t) (the dependent variables under study here), and presents the research questions. Chapter 4 discusses the methodology of my fieldwork and of the measurements taken, while Chapter 5 displays the results. Finally, in Chapter 6, I present my conclusions and discuss

the merits and shortcomings of this study, as well as the contributions it makes to the variety of linguistic disciplines involved.

CHAPTER 2

DIALECTOLOGY AND SOCIOLINGUISTICS

This sociophonetic study – the first ever conducted in the Bitburger area – takes into account and builds off of decades of research in two fields of linguistics. The first of these, *dialectology*, has laid some of the most important foundations; the dialectologists' efforts to locate the boundaries and document the defining characteristics of individual dialects (Wenker, 1881; Guilliéron, 1902-10; Wrede et al., 1927-56) as well as their research into the causes and processes of linguistic divergence (Harnisch, 2010; Lenz, 2010) are critical in understanding the history of the community's speech patterns as well as its history.

The theories, methods, and findings of the second field, *sociolinguistics*, are critical in researching and understanding a community's synchronic language patterns (Labov, 1963; Weinreich et al., 1968; Besch, 1981; Milroy, 1985). Like dialectology, however, they have brought us closer to understanding the causes and process of language change. The hope is that this study, a product of these two fields, will not merely be an addition to both, but also that it will contribute to the growing body of contemporary literature (Lenz, 2003; Schmidt, 2010; Schmidt and Herrgen, 2011) that demonstrates the common goals and interconnectedness of the two fields.

The following chapter describes the history of the research that has been

conducted on the regional, nonstandard varieties of German. Sections 2.1 and 2.2 deal with dialectology and sociolinguistics, respectively, describing the motivation behind and the accomplishments of both fields. In section 2.3, I present some examples of present-day research, which has drawn on the theories of both fields, erasing the distinction between the two somewhat. Finally, in 2.4, I demonstrate what implications the preceding studies have on the framework of the Bitburger Platt project.

2.1 Origins of Dialectology

In the late nineteenth century, much of the linguistic work in Europe was focused on historical/diachronic study. Many who engaged in this were members of the neogrammarian school of thought. Headquartered in Leipzig, it was the school of several notable linguists. Karl Verner, for example, is credited for explaining a key set of exceptions to Grimm's Law (1875-7), while Hermann Paul produced the seminal work *Prinzipien der Sprachgeschichte* (1880) ('Principles of the History of Language').

Perhaps the most notable (yet often overlooked) was Jost Winteler[1], who phonetically transcribed the dialect of his native village of Filzbach in Switzerland. His work was the first to use an orthography specifically developed for the target language, rather than seeking one-to-one correspondences with Standard German (Halle, 1968; Kohrt, 1984). Winteler's work was also taken as proof of the chief neogrammarian hypothesis, which was, in short, that all sound changes proceeded in a regular way and affected all possible tokens; any apparent exceptions were said to be the result of language contact and/or borrowing.

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[1] Winteler was also one of Albert Einstein's mentors, a fact which has, unfortunately, greatly overshadowed his linguistic contributions.

Prominent though the Leipzig school was, its theory was not accepted by all. The Marburg school, another group of German scholars spearheaded by Georg Wenker, aimed to disprove the absolute regularity of sound change by comparing the German Empire's numerous dialects.[2] This involved an immense documentation project wherein Wenker and his colleagues mailed out 50,000 questionnaires to towns and villages throughout the empire. The instructions on the questionnaires called for the recipients to write their villages' dialectal equivalents of forty[3] short Standard German sentences, composed such that they contained words that would show the reflexes of the West Germanic phonemes (for a complete list of these, see Barbour, 1990:61-3).

Though Wenker's project was highly ambitious (and would even be considered so today, our modern communication methods notwithstanding), the response rate was much greater than one would have expected: the majority of the questionnaires were actually completed and mailed back. However, the project became, in Barbour's words, "a victim of its own success" (1990:64). The actual analysis and plotting of the data onto maps was so time consuming that Wenker never lived to see its completion. It was not until 1926, under the direction of Ferdinand Wrede, Wenker's pupil, that the first volumes of the completed *Deutscher Sprachatlas* ("German Language Atlas") began to appear (Chambers and Trudgill, 1980). The final versions turned out to be very large and incredibly detailed – almost to the point that they were too cumbersome to use. Modern online versions have solved this problem to a degree, but few of Wrede's students would live to see this.

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[2] The motivations behind this project are actually disputed; for more on this, see Barbour (1990:61-3).

[3] The list was actually amended and expanded throughout the project, pushing the eventual number of sentences closer to fifty.

There is no doubt that the German language atlas project was of great merit: it served its purpose, contributed to our understanding of variation in the German-speaking world, and inspired documentation projects elsewhere in Europe (e.g. the Linguistic Atlas of France (Gilliéron (1902-10)) and North America. However, in the century since Wenker's time, the theories and methodologies of linguistics have changed greatly. Not surprisingly, the Marburg school's practices had some defects when compared to those we use today. The dialectologists of the late 1800s were almost exclusively focused on areal variation (hence the German name *Dialektgeographie*). Researchers avoided discussing situational or social variation (even though it was known to exist), and believed that data from farming villages was preferable to data gathered in cities, due to the 'corrupted' or 'blended' speech varieties one would find there[4].

In Wenker's methodology, the questionnaires were typically distributed to local schoolteachers. The teachers were asked to fill them in themselves or, if they weren't native to the village, to seek out one of their pupils who was native to do so (Schirmunski, 1962:77). Even in small villages with nonmobile inhabitants, it was perhaps not the best practice to assume that a schoolteacher would exhibit (or observe and accurately report) maximally dialectal speech. Another issue that might be raised today was the assumption that such a small sliver of the population can be representative of the entire village's speech patterns (excepting, of course, the unfortunate situations where a language or dialect has literally been reduced to one or two speakers).

Aside from the conundrum that self-reporting of language use is notoriously inaccurate (or reports on others' usage, conducted by anyone not trained as a linguist),

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[4] The assumption that there are truly homogenous speech communities anywhere is yet another fallacy; see Chambers (1980).

another inevitable problem that arose from it was the inconsistency in how the villagers spelled the words. Schirmunski (1962:77) gives the example of dialects in which the word *Seife* 'soap' is pronounced [sa:f]. The long [a:] was represented variously as <ah> and <aa>, but also as <a>, a grapheme that can be ambiguous in German, indicating either a short *or* long vowel. This would leave the dialectologist to guess which interpretation was correct when reading the surveys (as there were no audio recordings), and if linguists were to conduct an ensuing study of the maps to locate areas where, say, a loss of vowel length distinction had occurred, this could lead to confusion or false conclusions.

As stated above, geographical variation was the primary factor the dialectologists looked at. While it is undoubtedly important, we now know that it is only part of the story: situational and social factors (discussed below), even if not included in the manipulated variables, must at least be brought into consideration. The assumption that anyone's speech can be dependent solely on his or her geographic origin removes much of the human element from the equation; one cannot collect language samples as a geologist would soil samples and expect to have an accurate representation.

Though the solutions to these problems did not become mainstream until well into the twentieth century, there were those who pointed out the problems long before that. One of the earliest was Phillipp Wegener, who wrote that the dialectologists should be concerned not only with the dialect and the standard, but the intermediate variety as well. He also proposed a threefold system of classification for the different social groups: the learned, the urban lower class, and the farming peasants, where the urban lower class people were thought to be the primary users of the intermediate varieties. On this note,

Wegener writes:

> The varieties of lower class city speech have not yet gained equal recognition. They are usually taken to be bastardized dialect or bastardized standard language. Little attention has been paid to the features of this second class, although the understanding of this language is of great importance for understanding language development in a national society under the influence of a written standard language. (Wegener, 1891:935-6, my translation)

Wegener also described how a person being observed or interviewed by an educated researcher would often change his or her speech to accommodate, which was essentially the observer's paradox (Labov, 1972) and audience design style-shifting (Bell, 1984). His methods and analyses had their shortcomings, to be sure, but he was still ahead of his time. Not until the mid-twentieth century did any real change happen in the field that took these factors into account in a systematic way.

To summarize, the dialect geographers contributed to our understanding of geographical variation in language, and even today it is due to their efforts that we know so much about it. However, they limited the scope of variables they took into consideration, and in doing so, limited their understanding.

2.2 Origins of Sociolinguistics

Many demographic changes have occurred in Germany (and Europe as a whole) in the last few centuries, one of the main ones being urbanization (De Vries, 1984). While the mixing (and sometimes obliteration) of communities and/or their languages is a process that human society has always been prone to, the urbanization phenomenon in Europe greatly accelerated it over a large area. Additionally, both World Wars resulted in considerable territorial loss for Germany, as well as subsequent expulsions and relocations of millions of ethnic Germans; these migrations have made an already

interesting linguistic situation even more complex.

Though the aforementioned events certainly contributed to social language variation, they did not by any means mark the inception thereof. Social variation in German has been attested for centuries. Analyses of documents in Koblenz (Schützeichel, 1956) and Trier (Jungandreas, 1957), two important cities in the Moselle-Franconian area, show that divisions between the language of literature (as well as the upper class[5]) and commoners increased progressively between the thirteenth and sixteenth centuries (though this must not be confused with the standardized pronunciation of today, which did not develop until much later).

Also evident in earlier times was the presence of intermediate speech varieties between those of the upper and lower class. In an article on the colloquial language of the Rhine-Franconian area, Viëtor (1875) writes that many people of Nassau would "speak with hardly a word sounding as it would in Standard German without actually falling into Nassau dialect" (134, my translation), and that "only in the pronunciation of consonants has the speech of the educated Nassauers been moved toward the standard" (136, my translation). While this is a bit of an oversimplification, it does illustrate awareness of the existence of registers between the dialect and standard, as well as an acknowledgment that even the educated class had only moved "toward the standard" as opposed to speaking exclusively Standard German. Wegener (1891), as noted above, also wrote of this phenomenon sixteen years later.

While over a half century would pass before investigations of these social

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[5] While this is by no means an assertion that all members of the aristocracy actually spoke this written variety in their everyday lives, there was a mismatch between the different classes' speech to at least some degree.

phenomena became mainstream, the foundations of the Labovian sociolinguistic methods we know today were being laid by scholars in the domains of dialect geography, anthropology, historical linguistics, and multilingualism. French Scholar Emil Durkheim, author of *The Rules of Sociological Method*, stated that language was a "social fact" alongside "religion, art, science, and law" (1895:198). Ferdinand De Saussure (1916), in addition to coining the distinction between synchronic and diachronic studies, noted the difference between *langue*, the language located in and recognized by society at large, and *parole*, the speech of an individual.

Historical linguist Antoine Meillet (a pupil of De Saussure) and his protégé André Martinet both greatly influenced the work of Uriel Weinreich, who mentored and worked closely with William Labov. Though his legacy was tragically cut short in 1967 at age 40, Weinreich's dissertation, *Languages in Contact* (1953), was a significant contribution to the field and was another piece in the development of the variationist framework in the next decade.

The early 1960s saw a further rise of researchers conducting studies drawing connections between social structure and language. One of the first of these was actually carried out in Germany by Else Hofmann (1963), whose study focused on the speech of people who lived in the rural village of Nauborn but commuted to the city of Wetzlar, both in the province Hessen. However, this study did not immediately gain much recognition and was quickly overshadowed by another across the Atlantic in 1966, when William Labov published *The Social Stratification of English in New York City*.

Labov (1966) hypothesized, tested, and confirmed that socio-economic class, age, and gender are were factors in determining how one chose to speak. Labov divided his

subjects into classes based on measurable attributes from sociology, such as income, occupation, and education, and this multi-item index has become standard for sociolinguistic studies since. He also put forth the idea of investigable, quantifiable linguistic variables, such as the presence or absence of syllable-final rhoticity in English, which he specifically investigated as a pilot to justify the New York City study (Labov, 1966). With these, the results of the many subjects in his experiments could be averaged and generalizations could be made about the speech of different classes, ages, genders, etc. Labov's methodology, or a modified version thereof, was quickly accepted as the norm among linguists in North America and Britain. Labov is credited as the founder of the variationist framework, in which *structured heterogeneity* is assumed to be an inherent part of language and an integral part of language change (Weinreich et al., 1968).

The methodology caught on in Germany, and by 1971 the Bonn Institut für geschichtliche Landeskunde had begun the first major project in Germany to use such methods. Over a span of six years, the researchers investigated the community of Erp/Erfstadt[6], a southern suburb of Cologne. The town was ideal for investigating variation because it exemplified a rural, agrarian population being influenced by and transitioning into an urban, industrialized one, a situation typical of many areas of Germany, if not Europe and the world as a whole. The study is further discussed in 2.4.

[6] The name of this town is significant in and of itself, as it illustrates the retention of post-liquid [p], which the Moselle-Franconian dialect area just to the south – as well as Standard German – has shifted to [f].

2.3 Contemporary Work: Amalgamation of the Two Fields

Perhaps one of the best summaries of the current state of dialectology and sociolinguistics is found in *Language and Space* (eds. Auer and Schmidt, 2010), a collection of papers discussing studies in the aforementioned fields. The first volume, *Theories and Methods*, in the editor's words, "directly addresses both the changes in the object of study (linguistic variation across space) and the attempts within the relevant disciplines to adjust to the concomitant reconceptualization of its nature" (Auer, 2010:v). Chapter 16, by Harnisch, discusses the interrelatedness between geographical (diatopic) and social (diastratic) change.

2.3.1 Diatopic change

Although many of the forces at work in reshaping the dialects are modern phenomena (e.g. sharply-defined political borders, national mass media, etc.), others have existed and operated for many hundreds of years, creating the traditional dialect areas we know today. A relevant example is the medieval border between the archdiocese[7] of Trier and Cologne, along which lies the modern-day border of Ripuarian (Cologne's dialect group) and Mosel Franconian (the dialect group to which Bitburger Platt belongs). The two dialect areas diverged diatopically due to diastratic factors operating under the umbrella of the respective diocese.

A more recent change involving the border of the Grand Duchy of Luxemburg also affects the speech of the Bitburg area today. Luxemburg's varieties of German are rife with French loanwords, and the neighboring German territory encompassing Bitburg,

[7] While an ecclesiastical border such as this would not exert much influence today, the magnitude of Christianity's influence on Europe at the time gave it much more salience.

which belonged to Luxemburg, exhibits these as well (e.g. *Parabli* < fr. parapluie 'umbrella' (std. *Regenschirm*); *Tratur* < fr. trottoir 'sidewalk' (std. *Gehweg*). Apart from lexical differences, Standard German and Bitburger Platt also exhibit some major phonological discrepancies that can be traced to earlier borders. One of the most salient is the realization of West Germanic *i[8]. While this sound remains [ɪ] in most Standard German words, it has undergone lowering in the West Middle German region, mostly to [e], but in some areas to [a]. The a-zone, where the word *mit* 'with' is pronounced [mat], roughly corresponds to present-day Luxembourg and the German territory it once owned, shown below in Figure 2.1.

The dynamics of language use in modern day Bitburg, however, are not identical to those of Luxembourg. In Luxembourg, the local vernacular is one of the nation's three

Figure 2.1: Luxembourg's territorial loss, adapted from Newton (1996:7)

[8] Unlike the syllable-final unshifted [t] in the area, which is largely confined to a small set of function words, the [ɪ] > [a] lowering is pervasive throughout the lexicon.

official languages and can be seen written on signs throughout towns and heard in everyday speech in many domains. However, in Bitburg (not ten kilometers from the border), the vernacular is a substrate under the umbrella of Standard German; Bitburger Platt is confined to intimate domains (i.e. family, friends, home), while Standard German (or a locally influenced variety thereof) is preferred in public and professional domains. Thus, while Bitburger Platt and Luxemburgisch are mutually intelligible, the societal norms of the two countries do not allow for Bitburgers and Luxemburgers to use their vernaculars in the same domains, nor with each other – a reality confirmed by many of my participants, who denied using Platt with Luxemburgers when asked if they could do so[9] (but see 6.3 for a stark counterexample). Harnisch presents a parallel example of Swiss German and the neighboring dialect of Baden, Germany – the two speech forms are mutually intelligible, but because of differences in acceptable domains of usage, Badeners do not use their dialect with the Swiss who lie just across the Rhine (282). Domains are further discussed in section 2.5.

The author points out that much change, be it diatopic or diastratic, occurs as a result of the constant shifting and leveling of dialect continua, and addresses the problems of assigning blanket labels to geographical areas:

> Varieties may diverge in particular structural features or in bundles of such features to different degrees. Only in theory will a linguistic space split in all structural features which then define and delimit the emerging new spaces exhaustively. For this reason, the denominations of linguistic spaces according to the dialects which "occupy" them … give an unrealistic, highly idealized picture. (Harnisch in Schmidt, 2010:275)

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[9] Some participants, especially those who worked in Luxemburg, reported that they did indeed use their dialect when speaking to people in Luxemburg; this suggests that the 'rules' governing usage of the respective speech forms are not inflexible.

2.3.2 Diastratic change

The most common process discussed among sociolinguists is top-to-bottom change, where the basilects under the influence of a regional/national standard language change in the direction of the standard speech, a process attested almost ubiquitously in Europe. However, the divergence need not always proceed in this direction, as an instance on the former border between East and West Germany shows. The border lay close to (though not perfectly along) the uvular/apical [R/r] isogloss, where dialects on the East German side predominantly used the uvular variant, and those on West German side, the apical. The uvular pronunciation also happens to be the dominant variant in standard German[10]. When the political border solidified during the Cold War, some originally uvular-dominant towns lying on the West German side switched their pronunciation to conform to the nonstandard [r] variant of the dialects spoken in other West German villages nearby (Harnisch in Schmidt, 2010:280).

Alexandra Lenz' chapter in *Language and Space* is noteworthy with respect to diastratic change as well. According to Lenz, "Current results from the German language area, based on sociolinguistic data, provide evidence for the thesis that there is no necessary contradiction between a continuum and a variety model" (Lenz in Schmidt, 2010:302). In the West Middle German language area, many of the dialects are still different enough from Standard German to be considered separate languages. There is, however, a continuum involving regiolects – nonstandard regional language forms that exhibit features shared by a cluster of dialects. Figure 2.2, modified from König 1978, displays a distribution of base dialects, regional colloquial varieties, and the standard.

[10] Uvular [R] is the standard for the German in Germany; this does not apply to standard Swiss or Austrian German, which largely retain the apical [r].

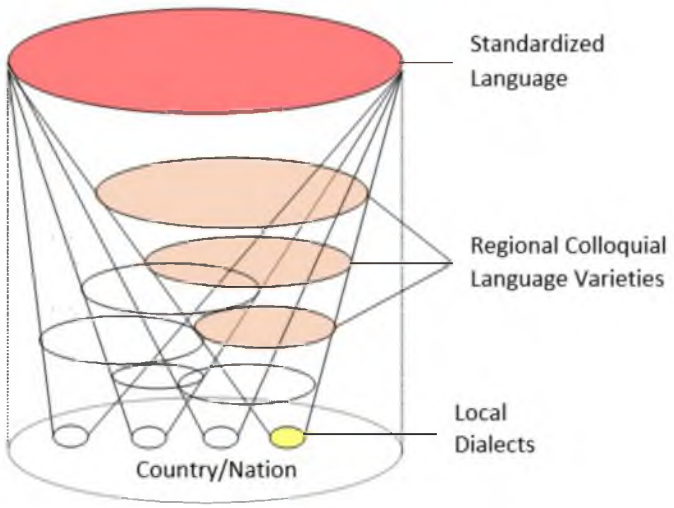

Figure 2.2: Three-dimensional standard/colloquial/dialect continuum, modified from König (1978) by Andrea Pischnotte.

Alongside the continuum between nonstandard and standard-like regiolects, there is another dimension: speakers' evaluation of them. Whereas older speakers tend to view higher regiolect speech as their (best) version of 'standard German,' younger speakers tend to label it as 'nonstandard speech' – the same as they would the local dialect. The West Middle German regiolect has speakers at different stages of the continuum coexisting. These stages are displayed below in Table 2.1, adapted from Lenz in LS (306); note that basilectal speech has not been included, as this is solely an analysis of standard and regiolectal language.

While the goal of classical dialectology was to isolate a supposedly perfect dialect that had been untainted by the influence of the standard language, modern-day dialectological studies have largely moved away from this, embracing language for the fluid entity that it is and investigating the multiple facets thereof. Schmidt (2010:15) notes the importance of understanding the structure and usage of all varieties that

Table 2.1: Stages of objective and subjective restructuring

<table>
<tr><th colspan="2" rowspan="2">Objective structuring</th><th colspan="4">Subjective structuring (Informants' labels)</th></tr>
<tr><th>Step 1</th><th>Step 2</th><th>Step 3</th><th>Step 4</th></tr>
<tr><td colspan="2">STANDARD VARIETY</td><td>'proper Standard German'</td><td>'proper Standard German'</td><td>'proper Standard German'</td><td>'Standard German'</td></tr>
<tr><td rowspan="3">REGIOELCT</td><td>Regional Accent</td><td rowspan="3">'our Standard German'</td><td>'our best Standard German'</td><td>'our best Standard German'</td><td rowspan="3">'colloquial language'</td></tr>
<tr><td>Upper Regional Nonstandard</td><td>'our normal Standard German'</td><td>'colloquial language'</td></tr>
<tr><td>Lower Regional Nonstandard</td></tr>
</table>

underlie the standard, as well as the processes that have led to the regional accented standard varieties becoming the dominant variety for the majority of speakers; these aspirations are very much in line with variationist sociolinguistics.

The lessons of both dialectology and sociolinguistics are of considerable importance in selecting and analyzing the variables of this study, discussed at length in subsequent chapters. A merger of (d) and (t) is not unique to Bitburg. However, the merger in this particular area (Western Rhineland-Palatinate, Luxemburg, and Lorraine) is the result of a historical process very different from the way in which, say, Viennese German developed the same trait. While we must take into consideration that other dialects (as well as some speech forms other than the base dialect) might also exhibit a merger of these segments, such a merger is nevertheless a nonstandard feature typical of the Bitburg area (basilect or otherwise) and worthy of investigation.

2.4 Framework of the Present Study

Having discussed what has transpired in dialectology and sociolinguistics, including contemporary research that incorporates the theories of both of these fields, I now turn to the situational and social factors taken into consideration in the Bitburg study.

2.4.1 Situational factors

The Erp project (Besch et al., 1981-3), mentioned above in 2.2, demonstrated the effect that a given situation can have on a speaker. The researchers collected objective data in two different stages, the first being a casual conversation with an acquaintance, the second an interview about their job with a stranger. In a third interview, participants were asked for self-reports on their language use. Subsequent analyses of this corpus (Mattheier, 1980; Lausberg, 1993; Kreymann, 1994) all showed that the nonstandard variants such as unshifted (p) in [hɛlpən] 'to help' (Std. Ger. [hɛlfən]), unshifted (t) in [vat] 'what' (Std. Ger. [vas]), and spirantized/coronalized (g) in [bɛ^{ɐ}ʃ] 'mountain' (Std. Ger. [bɛ^{ɐ}k]) occurred far more frequently in the informal conversations than in the interviews.

Another important and more recent study was conducted in and around the town of Wittlich, which lies only 30 km east of Bitburg. In this study, Lenz (2003) investigated areal, situational, and social factors connected to the realizations of short (i), briefly mentioned above in 2.3.1, which Eifel dialects have lowered to a diverse array of mid and even low vowels (Bitburg, for example, has [batə^{ɐ}] instead of [bɪtə^{ɐ}] in the word *bitter* 'id.'). As in the Erp study, Lenz investigated conversational and interview data. She also,

however, directly asked participants for translations into their dialect and for standard pronunciations of certain sentences. An examination of the variable (-g#) found that, in general, the nonstandard variants [ʃ], [x] and Ø occurred most frequently in the conversations and dialect translations. While Lenz found that a continuum between the standard and dialect did indeed exist, there was also evidence of a fairly clean break at some point, not only in the speaker's attitudes and perceptions about their own speech, but also in their actual use of the language. This matter is further discussed in 2.5.

To be sure, geographical proximity alone offers no guarantee that Bitburg and Wittlich would have had equal histories or developments with respect to language usage. For example, Bitburg was a part of the Grand Duchy of Luxemburg for centuries, while Wittlich has never been (Newton, 1996:7, 185). In terms of the language dynamics, however, Lenz' findings actually show crucial similarities to those I present later for Bitburg, which may indeed be due to geographical proximity, or at least due to the transitional-agrarian lifestyles found so frequently in this region of Germany.

2.4.2 Age and gender

According to the *apparent time hypothesis*, one can observe language change by comparing the speech older people to that of younger people (Labov, 1963). Thus, for any sociolinguistic study investigating language change or language shift, age or life stage should be a variable taken into consideration where possible. Many studies of different age groups have been instrumental in finding cross-linguistic signs of language shift or death. Dorian (1981) and Schmidt (1985) observed a loss of morphological distinctions in younger speakers of East Southerland Gaelic and Dyirbal, respectively.

Campbell and Muntzel (1989) showed generalizations of phonological rules in Pipil, while Babel (2007) showed phonological change toward conformity of English's sound system in Northern Paiute.

The apparent time hypothesis is not bulletproof, especially when one considers studies that have shown *age grading*, a phenomenon in which people change their speech throughout the course of their lives. Chambers (1995) and Eckert (1997) show that the social pressures one feels, the responsibilities one has, and the very way one wishes to portray him or herself all influence the way the person chooses to speak, which might lead to the avoidance of nonstandard variants that are stigmatized or that people are hyper-aware of. These social pressures – and thus, the usage of certain linguistic variables affected by them – can vary with one's age or life stage: the person may face certain job commitments in one stage of life, but other responsibilities in another, and his or her peer group or social network may change as well. It is thus possible that in some cases, an older person will not be speaking the same way that he or she was fifty or sixty years ago. In short, the concept of apparent time is most useful when *real time* trend studies or panel studies are not available due to time constraints (Sankoff, 2006).

In addition, one cannot ignore the role that *gender* has been shown to play in language variation. Aside from the simple fact that men's and women's vocal tracts are shaped differently and produce different frequencies, the two genders also exhibit different patterns in their usage of standard and nonstandard forms. According to Labov (1990), men's speech tends to have more nonstandard variants than women's, women tend to be the innovators in 'change from below' (i.e. change independent of external influence), and women tend to use more standardized forms in 'change from above' (i.e.

when the Standard variety is encroaching on the nonstandard one).

2.4.3 Social network

Social networks are the groups of people with whom a speaker regularly associates, and with whom he or she must establish or maintain rapport. They are, therefore, the people from whom he or she will feel the aforementioned pressures to use or avoid using certain linguistic variants or language varieties. Roughly speaking, a person's social network is classified as 'closed' if most of his or her daily contact takes place amongst tight-knit groups in or close to the community, but 'open' if the contact takes place with loosely-connected groups of people elsewhere – or who are from elsewhere – with few or no ties to the community. The general finding is that people with closed networks tend to resist linguistic change from outside, while those with open networks are more likely to participate in such change: DuBois and Horvath (1998) found such patterns with interdental fricatives among speakers of Cajun English; Milroy (1985), working in Belfast, found more vowel innovation in open-networked speakers than those with closed networks; and Lippi-Green's (1989) study in western Austria found similar patterns with Alemannic German vowels. Lippi-Green's network strength scale was based on self-reported aspects of the participant's daily lives, such as how often they commuted to a larger city or how many village organizations they were members of.

Though I originally had planned to classify participants into open and closed networks, an investigation of this dimension has since been abandoned: too few of the participants' social networks – even the elderly ones – could rightfully be considered "closed." What is important, however, is that every participant whose data I analyze in

this study grew up and went to primary school in the small collection of neighboring villages, left for university or vocational school for a few years (located outside the part of Germany where their home vernacular would have been spoken), and then returned to their village. All consider the Bitburg area to be their home and have no plans to live elsewhere. At the same time, however, they maintain contact with several people outside the area and, inasmuch as they are still young and capable of travel, often visit other parts of Germany or Europe for work or pleasure. In sum, even though the participants' social network is not among the investigated variables in this study, it is nevertheless an important element and has been taken into consideration: all participants share some common life events and social patterns other than the mere fact that they live in the Bitburg area.

2.5 Language Domains

We have thus far discussed the ways in which language changes diatopically and diastratically; we have also seen examples of the situational and social factors that lie at the heart of these changes. A final issue that must be touched on when considering these kinds of variation between standard and vernacular speech is the distribution of acceptable domains. The difference between the vernacular and the standard languages in the Bitburg area are quite substantial. In such cases where the differences are so great, the concept of *diglossia* has often been discussed in the literature.

First coined by Ferguson (1959:326), diglossia describes two related languages or dialects, where one is a high or prestigious variety (H), and the other is a low or common form (L). The four "defining languages" – or language pairs – that he proposed as

examples of this were Modern Standard Arabic and Arabic Dialects, Standard and Haitian Creole French, Katharévusa and Dhimotikí Greek, and Standard and Swiss German. Diglossia assumes that the High and Low varieties are in complementary distribution, never overlapping in their domains of usage, a process Romaine (1994:47) calls the "compartmentalization of varieties."

The very nature of diglossia and the definition thereof is not without controversy, and it has undergone several extensions and revisions since first proposed in an effort to account for situations other than Ferguson's four examples (see Fishman (1967), Ferguson (1991), Kaye (2001), Hudson (2002) among others). However, diglossia's fundamental tenets have in large part been abandoned in contemporary literature. One key feature of diglossia is the notion of *prestige*, which the High variety was supposed to have while the Low was not. Many modern-day sociolinguists, most prominently Milroy (1985) and Milroy (1992), have largely dismantled the notion of prestige in language, showing examples where features of several vernacular language varieties were viewed more favorably by speakers of urban varieties of English than were those of standard speech. While there are undoubtedly situations in which certain varieties are preferred to others, as the examples in 2.4.1 show, a purely diglossic model dependent on the notion of prestige is incompatible with this study (and, arguably, sociolinguistics as a whole). An analysis of the situational language variation among the participants in this study, as well as alternatives to diglossia, is discussed in the conclusion of this dissertation.

2.6 Recapitulation

In this chapter, I have discussed the background of dialectology and sociolinguistics, examining some of the seminal work in these fields – both in Germany and elsewhere – as well as some more recent research. I have laid out the situational and social factors that have been proven to be important in shaping one's speech and made the case for classifying participants in my study by age and gender, as well as ensuring that they all shared some basic similarities in their backgrounds. In the next chapter, I move to a discussion of the historical and acoustic aspects of the phonological variables under study in this dissertation.

CHAPTER 3

BACKGROUND OF GERMAN, BITGURG, AND VARIABLES OF STUDY

At a basic level, this study examines correlations between the participants' age and gender and their use of the phonetic variables (d) and (t) in different speech situations. Before examining the specifics of the actual research, we must first consider some of the relevant linguistic developments that have taken place in this part of Germany and discuss the diachronic and synchronic nature of the aforementioned variables. This chapter provides an overview of the sound changes that the West Germanic language, spoken roughly two thousand years ago, underwent that have produced the modern stop consonants of both Standard German and Bitburger Platt. Following this, I give a more in-depth synchronic description of the phonological nature of these consonants.

3.1 History of German and Bitburg

3.1.1 History of German stop consonants and the Second Sound Shift

German is a member of the Germanic branch of Indo-European. Within Germanic, there are three subbranches: North (the Scandinavian languages), East (the now-extinct Gothic languages), and West, to which English, Dutch and German belong.

Within West Germanic, the High/Low German divide is the most important historic rift[11]. High German[12] varieties, spoken mostly in the central and southern German uplands, have all completed the Second Germanic Sound Shift to varying degrees; conversely, Low German varieties, predominantly found on the northern plains and coasts, have not.

The consonant isoglosses dividing Low and High German run east-to-west across northern Germany; however, they do not all follow exactly the same course. For example, the line dividing southern [pf] from northern [p] is found farther to the south than the line dividing southern [ts] from northern [t]. Varieties in this crossover zone, both in the east and west, are termed Central German: they are classified under the umbrella of High German, but are distinct from Upper German varieties to the south that have completed all sound changes.

In West Central German, shortly before hitting the Rhine River, the isoglosses split apart, fanning out toward the west. For this reason, much of west-central Germany, some of Alsace-Lorraine, all of Luxemburg, a sliver of western Belgium, and parts of the south-western Netherlands are said to lie in the Rhenish Fan, a particularly broad part of the aforementioned "crossover zone" between Low and High German. A person traveling north through western Germany would cross the isoglosses one at a time, metaphorically experiencing a gradual staircase from High German down into Low German. Figure 3.1 displays the relative uniformity of these isoglosses in the east and the fanning in the west.

The town of Bitburg lies roughly 30 km north of Trier (visible in Figure 3.1) in

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[11] In today's world, the most salient divide arguably lies *within* Low German, between English and the continental varieties.

[12] Although Modern Standard German is also called "High German" and is composed largely of central/southern features, it is crucial not to confuse the High subbranch with the meaning 'standard'; many High German varieties have little to no mutual intelligibility with Standard German.

Figure 3.1: Broad Second Sound Shift map, modified from http://www.maxen.de/maxenLingual/MAXENWort.html

the northwestern corner of Rheinland-Pfalz on the southern edge of a forested hill country known as the Eifel. The Bitburg dialect belongs to the Moselle-Franconian group (regiolect) of West Central German; one of the metaphoric 'feathers' of the Rhenish Fan, this group of dialects stretches from northeast to southwest. Figures 3.2(a) and (b) display the West Central German area (i.e. the Rhenish fan) and Moselle-Franconian, respectively.

Bitburg is visible in 3.2(a) in the lower left-hand corner; 3.2(b) displays more territory to the south, placing Bitburg just left of the center of the map. Note that some treat Luxembourgish as a distinct regiolect, evidenced by the diagonal hatching over the country; this boundary is somewhat artificial, as most features of Luxembourgish extend well into neighboring areas of Germany, including Bitburg.

East of the Rhine, the Moselle-Franconian zone includes the Siegerland of North Rhine-Westfalia and nearly all of the east-bank exclave of Rhineland-Palatinate. West of

(a)

(b)

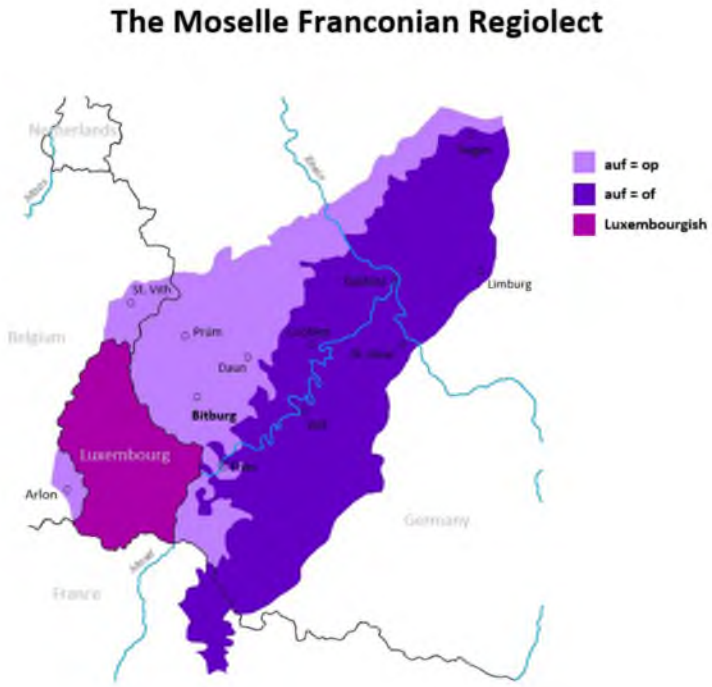

Figure 3.2: Linguistic maps of the area of interest, by Andrea Pischnotte; (a): Rhenish Fan area, adapted from the Institut für Landeskunde; (b): Moselle-Franconian regiolect, adapted from Erren (2010)

the Rhine, the zone follows the course of the Mosel River, terminating at the Romance/Germanic border in southeastern Belgium, western Luxemburg, and Lorraine. Like most dialects of Central and Northern Germany, this area has a categorical retention of Proto-West-Germanic initial *p in words such as *Pund* 'pound' (Standard *Pfund*); ambisyllabic/geminate *pp likewise remains unshifted (though no longer geminated) in *Apel* 'apple' (Standard *Apfel)* (Schirmunski, 1962: 272-3). Table 3.1 provides another way of visualizing where Bitburg lies between Low and Upper German with eight diagnostic words commonly used in identifying positions in the Rhenish fan.

The zone is set apart from Rhine-Franconian dialects to the south by not having followed through with the shift of final *t to [s] in some frequently used pronouns (*wat* 'what', *dat* 'that', *et* 'it', as opposed to the southern *was, das,* and *es*), as well as some grammatical endings and verb forms (e.g. *allt* 'everything' vs. Standard *alles*; *gesaat* 'sat (past part.)' vs. Standard *gesessen*) (Schirmunski, 1962: 278-9). Moselle-Franconian has, however, completed the post-liquid *p > [f]/[pf] in words such as *Dorf* 'village' and *helfen* 'to help' in agreement with the standard forms, setting it apart from the Ripuarian dialects in the northern Eifel and the Cologne Basin, where the aforementioned words are *Dorp* and *helpen*, or variants thereof, retaining the plosives. Bisecting the Moselle-Franconian zone is an isogloss running north of the Moselle River confined to a single

Table 3.1: Second German Sound Shift

English Gloss >	time (tide)	I	make	village (thorpe)	that	on (up)	apple	Pound
Low German	tid	ik	maken	dorp	dat	op / up	Apel	pund
Bitburger Platt	tsekt	ix	maxen	dorf	dat	op	Apel	pund
High (Upper) German	tsait	ix	maxen	Dorf	das	auf	Apfel	pfund

but extremely common lexical item: *op/of* 'on' (cf. Eng. up), as well as the locative and directional derivatives *drop/drof* and *rop/rof*. *Of* is the Standard-like spirantized southern form, while *op* is the nonstandard, unshifted form used north of the river; the latter is characteristic of the Bitburg dialect. Aside from the aforementioned exceptions, all of the spirantizations found in High German have been carried out in Bitburg as well.

A further change that affected the vast majority of the High German territory was the High German Consonant Lenition, where the fortis/lenis distinction in p/b, t/d, k/g was lost, resulting generally in a single series of voiceless lenis stops. This change was far-reaching, affecting nearly all of the High German territory to varying degrees. Only some of the fringes of the High German territory escaped this sound change; one of these pockets was an area west of the Rhine encompassing Lorraine, Luxemburg, and the Southern Eifel, where Bitburg lies (Veith, 1999).

*3.1.2 West Germanic *ð and *d*

Another consonantal matter associated with the Second Sound Shift involves West Germanic *d[13]. In Upper German (and some Central German dialects), this sound was shifted to [t] in all positions: *dag > Tag 'day', *gode > gute 'good (nom. fem.)'. In Low German and the Rhenish Fan, however, *d underwent no fortition. A subsequent shift of *ð to [d], eventually affecting all West Germanic languages on the continent[14], led to the merger of *ð and *d to [d] in the areas that had not undergone the *d > [t] shift, including Moselle-Franconian (Schirmunski, 1962:300-1).

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[13] Southern varieties of German actually followed this through with the labial and velar stops as well.

[14] English has many varieties that have changed *ð to [d] or [t] as well; however, this is traceable to other sound shifts, rather than the one on the continent.

Recall from 3.1.1 that Bitburger Platt lies in a small geographical pocket that did not undergo lenition of *p and *k to [b] and [g]. This has led to an asymmetrical inventory in Bitburger Platt (at least in native German words), where an older fortis/lenis contrast is held in the labial and velar consonants, but not in alveolars. This is one of the distinguishing features of Bitburger Platt, as well as the source of the sociophonetic variables of this study. A more detailed discussion of these is found below in section 4.3, but let us first consider the sounds themselves, in terms of what differentiates them and how it can be measured.

3.2 Nature of Contrasts and Acoustic Correlates

The variables of study, *ð and *d, have the Modern Standard German reflexes of [d] and [t], a distinction that is no longer based on the feature 'continuant', but on fortis/lenis parameters. Thus far, I have not said much of their distinctive features and acoustic correlates, nor have I spoken of the reasons for using the terms *fortis/lenis* in the first place, rather than the more commonly used terms *voiced/voiceless*. This section addresses these matters, providing a description of what distinguishes the fortis/lenis stops from each other and how this contrast is realized.

3.2.1 The distinctive nature of the plosives

The contrast between /p, t, k/ and /b, d, g/ in German (and many other Germanic languages, for that matter) has traditionally been described as *fortis/lenis*, as well as *tense/lax*, *tenuis/media*, and other terms denoting a contrast in strength or tension. However, the contrast is also sometimes described as *voiced/voiceless*, with these words

or derivatives thereof being used in well-established linguistic terms (cf. *final-devoicing*[15], used to describe what happens when a German word such as /hand/ 'id.' is pronounced [hant], the usual realization). In contrast to [tense], a distinctive feature [voice] would describe whether the vocal cords are vibrating or not. While it is true that German /b, d, g/ can be pre-voiced or passively voiced in certain environments, it is not the case that they must be.

In a study focusing on the feature [tense] in German obstruents, Jessen (1998: 42-4) points out that three major pronunciation dictionaries (*Duden*, *Wörterbuch der deutschen Aussprache*, and *Siebs*) show that /p, t, k/ and /b, d, g/ in some word-initial contexts are differentiated by aspiration alone; in cases where the stops show differences in voicing, it is almost always accompanied by a difference in aspiration as well. Only in intervocalic position is voicing said to be the primary opposition, and even then, it is only claimed as such in the *Wörterbuch der deutschen Aussprache*. Note that this is said to apply only to Standard and Colloquial Standard German.

Following Jakobson and Waugh (1987), Jessen (1998) speaks of the importance of a *common denominator*, that is, the basic "phonetic properties that remain as phonetic constants in the realization of the given opposition across different contexts and other sources of variability" (p. 12). Consider, for instance, the nonsense words [áta], [áda], [ta], and [da] from an imaginary language. In the first two words, [t] and [d] could be

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[15] Jessen (1998: 160-2) points out the inadequacy of calling the process *final devoicing*, noting that the German word *Auslautverhärtung* ('final hardening/tensing') is a bit better suited to describe it. Iverson and Salmons (1995) compare the phenomenon in Dutch, where the /hand/ > [hant] transformation involves *loss* of the feature [+voice] to the phenomenon in German, where what seems to be the same transformation actually involves the *addition* of a feature [+spread], or [tense] in Jessen's terms; both convey the notion of a fortition.

differentiated by a number of phonetic qualities. Let us assume that our imaginary speaker distinguishes them with a longer duration of closure for [t], voicing into the closure for [d], longer post-stop aspiration with [t], and a longer vowel before [d]. With the latter two words, if this speaker were to consistently pronounce [da] with pre-voicing and [ta] without it, this would suggest that [voice] is the distinctive feature. However, if the same speaker were to pronounce the final two words with differences in aspiration alone, and if this pattern were replicated elsewhere, one would have strong evidence that the common denominator – the main acoustic correlate – is aspiration, meaning that [voice] may not be the underlying distinctive feature.

Based on Jessen's report from the prescriptive guides, one could make an educated guess that the basic correlate for the [tense] feature in German is aspiration as well. However, it must be mentioned that, although there is widespread acceptance of a tense/lax distinction in German, it is by no means the only proposed way to account for the difference. According to Jessen (1998:143), Wurzel (1970), Ternes (1987), Hall (1993), Wiese (1996), and Kingston and Diehl (1994) all argue for [voice] as the distinctive feature. Iverson and Salmons (1995) argue that the distinctive feature is [spread]. Like Jessen (1998), Iverson and Salmons argue for "a typological contrast between languages that employ [tense] … and those that employ [voice] in their stops" (p. 143); the only difference, according to Iverson and Salmons, is that those belonging to the former class would instead employ [spread]; however, this is more of an matter of terminology, rather than an argument against [tense]. With this in mind, let us examine what light some recent phonetic analyses have shone on this matter before further discussing the terminology.

3.2.2 Acoustic analyses

One of the most important contributions to the study of phonetics was Lisker and Abramson's *Cross-language study of voicing in initial stops: acoustic measurements* (1964), in which stop consonants from several different languages were measured for their *voice onset time* (VOT). Simply put, VOT is a measurement of when the vocal cords begin vibrating relative to the release of the stop consonant. When vocal vibrations begin prior to stop release, there is a *voice lead*, measured as a negative VOT value, while stops with vocal vibrations beginning after release are said to have a *voice lag* – a positive VOT value.

Aspiration and positive VOT can be measured using the same criteria, though some (Künzel (1977), Braun (1988), and Jessen (1998)) divorce the onset of voicing from the termination of aspiration. There are in fact cases of bimodal patterning, wherein stops occur with both a voice lead *and* a voice lag. In such cases, it is possible to have two VOT values: one describing the *pre-voicing*, and the other for the termination of *aspiration*). The present study conflates all of this as VOT[16].

Braun (1996) compared VOT in the plosives of the West- and East-Low, West-Central, and West- and East-Upper varieties of German (No reliable East-Central German data were available). The West Middle German data are particularly of interest to us here, as some of them come from the Moselle-Franconian region, in which Bitburg lies. The Standard German data, to which the regional variants were being compared, were – in Braun's words – 'astoundingly non-uniform' (p. 23, my translation). For example, Standard (t), although consistently aspirated, had a VOT of 25ms as measured by Stock

[16] Thorough analysis has revealed no tokens with voicing lead in the participants analyzed, rendering a discussion of prevoicing moot for our purposes.

(1971), but 60 according to Haag (1979) and 71 according to Ternes and Pétursson (1979). (d) had a VOT of 11 according to Ternes and Pétursson, but Stock reported values between -54 and 12. The discrepancies stem from inconsistent measurement standards; for example, Stock measured /p,t,k/ only in medial position, but /b,d,g/ only in initial position (Braun, 23-4).

The Moselle-Franconian plosives were measured only word-initially. /p,t,k/ were found to have VOTs of 38, 51.5, and 68.5, respectively, while /b,d,g/ measured 9, 10, and 21.5. The name of the village from which the Moselle-Franconian data came is not given, and given the diversity in the Rhenish Fan, it is altogether possible that the plosives are not comparable with those in Bitburger Platt. However, when one includes the other two West-Middle German samples given from Koblenz and the Pfalz, /p,t,k/ consistently have higher VOT values in initial position than /b,d,g/, and the latter never show a negative VOT.

Jessen (1998), in his study of the [tense] feature in Standard German, found strong evidence that [voice] was not the feature distinguishing /p,t,k/ and /b,d,g/ in German; rather, the distinctive feature was [tense], with durational parameters - particularly aspiration - as the common denominator . After comparing six speakers' pronunciations of the plosives in utterance-initial, intervocalic, and post-voiceless environments, Jessen states:

> The opposition between tense and lax stops is significantly expressed by aspiration in the speech of all six speakers and in all three contexts. Stop voicing, on the other hand, is much less reliable in the expression of the tense/lax opposition. All speakers have significant voicing differences in intervocalic position. But when we consider utterance-initial and post-voiceless position, there is only one combination of context and speaker in which significant voicing differences are found. (p. 90)

A second correlate that Jessen, as well as Künzel (1977) and Piroth et al. (1991), found to be important in distinguishing fortis from lenis stops was the *closure duration*. Intervocalically, fortis stops maintained closure for a longer time than lenis stops did.

Finally, fortis and lenis consonants can have perturbation effects on the following vowel, one of which has been shown to be visible in the first and second harmonics, or *H1*[17] *and H2*. Fortis consonants produced a greater difference in decibels between these two harmonics than the lenis consonants did. Jessen (1998) investigated this parameter for German fortis and lenis stops in initial position, finding significant H1-H2 differences, and Cho, Jun, and Ladefoged's (2002) study of Cheju Korean also measured harmonic differences after Korean stops, only with a 3-way contrast (plain/fortis/aspirated) instead of simply fortis/lenis.

This study measures stops in *initial and medial* position using three of the acoustic parameters discussed above: *VOT and H1-H2* for initial, and *closure duration* for medial. The parameters discussed here are by no means the only correlates to laryngeal distinctions. One can measure aerodynamic/airflow differences (Cho, Jun, and Ladefoged, 2002) as well as differences in vocal fold positions (Esling and Edmondson, 2002; Esling and Harris, 2005). However, these require much more expensive and/or invasive equipment than what was feasible for this study. The parameters I have chosen are readily analyzable with a good-quality recording and an acoustic analysis program on a personal computer. Having discussed the correlates to the fortis/lenis distinction, I turn now to my own study of Bitburger Platt German.

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[17] *First harmonic* is merely another term for the *fundamental frequency*; it is labeled *H1* here instead of *F0* solely to remain in line with others who have conducted this test.

3.3 Variables of Present Study

This study investigates the Standard German and Bitburger Platt reflexes of West Germanic *d and *ð. These variables are grouped according to word classes and analyzed in the participants' two investigated speech registers: interview and conversation. While I stop short of labeling interview and conversational speech 'Standard' and 'Platt' outright, the purpose of eliciting these two speech registers is, in effect, to elicit both standard-like speech they would likely use with an outsider, and a more dialectal – or, at least, vernacular – variety they would comfortably speak with a close friend or family member. Here, I discuss the reflexes of West Germanic *d and *ð in both Standard German and Bitburger Platt. Historical information is taken from Schirmunski (1962), Veith (1984-99), and Kluge (2002).

*3.3.1 West Germanic *d*

After the High German sound shift, in which the West Germanic fortis sounds had become affricates or fricatives, *d underwent fortition in all southern and some central German varieties, becoming [t]. This change became a part of the language used in the literature of the middle ages and is reflected in Standard German today in initial position ([ta:g] 'day' < *dag, [t:ot] 'dead' < *daud, [topf] 'pot' < *duppen). In medial position it happened not only to the simplex *d, but also to the geminate *dd: ([ra:tən] 'to advise' < *ræda, [raitən] 'to ride (a horse)' < *ridan; [gərɪtən] 'ridden' < *geriddan, [bɪtən] 'to ask (for)' < *biddan). In final position, simplex and geminate *d underwent the same fortition ([to:t] 'dead' < *daud; [bɛt] 'bed' < *bedd(i)), though it is only by today's pronunciations that these are considered 'final'; historical geminates that formed today's final

consonants were not actually in final position until the subsequent apocape of the stem-final vowel).

In Bitburger Platt, the development of *d was different from Standard German. Initial and medial *d – simplex and geminate – did not undergo the fortition process. Thus, one finds [d] in these positions: ([da:x] 'day' < *dag, [dɛpən] 'pot' < *duppen; [reidən] 'to ride (a horse)' < *ridan, [geradən] 'ridden' < *geriddan. In final position, one finds /d/ as well, but this is usually only visible when a grammatical ending is attached; otherwise, it is obscured by final fortition, alternating morphophonemically with [t]: ([blɛ:t] 'leaf' < *blæd, but [mat də bli:dəᵇn] 'with the leaves.'

*3.3.2 West Germanic *ð*

Between the eighth and eleventh centuries AD, orthographic indications of the fricative [ð] (usually <th>) gradually disappeared in the High German areas. This shift crept northward, eventually infiltrating all Low German areas by the end of the fourteenth century (Schirmunski, 1962: 319). Modern Standard German has converted *ð to /d/ in all environments (Std. Ger. [du] 'you' (cf. thou) < *ðu, [dɪk] 'thick' < *ðik, [da:] 'there' < *ðær; [fe:dəɐ] 'feather' < *feðar, [wi:dəɐ] 'again' < *wiðar; /pfa:d/ 'path' < *pað, /to:d[18]/ 'death' < *dauð). Bitburger Platt underwent the same developments with regards to *ð (Bit. [dou] 'you' < *ðu, [dek] 'thick' < *ðik; [we:dəɐ] 'again' < *wiðar, [fi:dəɐ] 'feather' < *feðar; /pa:d/ 'path' < *pað, /dud[19]/ 'death' < *dauð).

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[18] As with the Platt example for the word 'leaf', there is morphophonemic alternation here; one does not hear [d] surfacing unless there is a syllabic suffix attached to the stem.
[19] In a narrow strip of territory near Bitburg, one finds this word and others that 'should' end with [–d] or [–t] actually ending with [-kt]. This phenomenon, results from this area being on the fringe of a zone around Cologne where stem-final alveolars have become

To recap, West Germanic had *ð, *d, and *t, which can be heard as such in standard varieties of English today. Modern Standard German's current alveolar series (d, t, ts) is the result of a chain shift, where *t > ts, *d > t, and *ð > d. Bitburger Platt started this chain shift with *t > ts, but did not complete it, leaving *ð and *d to fall collapse into [d]. The developments of West Germanic *ð and *d are summarized in Figure 3.3(a-b).

There are countless loans in both languages capable of introducing any of the aforementioned sounds. Consider the wide gap in the sound system that would have resulted when Bitburger Platt ended up with /d/ and /ts/. According to my own analysis, loanwords today have filled this gap, reintroducing an initial and medial /t/. Thus, for every word examined, one must be doubly sure of its historical background to avoid lumping something into a class where it does not actually belong. Standard German *tun* 'to do' and *Tanne* 'pine', for example, are members of the *d-class, but *tanken* 'to get gas (for a car)', from the English word *tank*, is not. There are also, of course, exceptions to many sound shifts, and cases where a particular word appears to pattern one way with some speakers but a different way with others must be approached with caution.

Returning to the sounds of native origin, Table 3.2 summarizes the origins of the stop consonants and what the probable variants in Bitburg would be.

Figure 3.3: Developments of West Germanic *ð and *d; (a) Standard German shift; (b) Bitburger Platt shift

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velarized; these forms with an alveolar-velar combination are said to be 'compromise forms' (Veith, 1984-99).

Table 3.2: Summary of reflexes of West Germanic forms

West Germanic ancestor of variables	Expected reflex in:	
	Bitburger Platt	Standard German
*ð-	d	d
*d-	d	t
*-ð-	d	d
*-d-	d	t
*-ð	d [t#]	d [t#]
*-d	d [t#]	t

3.4 Research Questions

This study addresses the following questions:

1. Do participants exhibit a fortis/lenis contrast for alveolar plosives in interview and/or conversation speech?

    a. In initial position, do they show a contrast in voice onset time and/or harmonic difference?

    b. In medial position, do they show a contrast in closure duration?

2. Can differences in the participants' speech (i.e. answers to question 1) be correlated with age and/or gender?

3.5 Summary of Significance

This study is a contribution to the fields of sociolinguistics and dialectology. Much of the literature on these sounds has concentrated on how the plosive consonants alternate with affricates or fricatives (e.g. dat vs. das), but there is not, to my knowledge, any study that has specifically targeted the aforementioned variables in the Bitburg area. Socociolinguistic studies in on the Bitburg area, as mentioned in the introduction, are also

nonexistent, if one excludes Lenz' work on the community of Wittlich (which arguably does not belong to the Bitburg area).

The assumption has always been that *ð and *d have merged in all continental Low German and some Middle German dialects, but given that the data used to create most of today's German language atlases are over 100 years old and that Bitburg lies in a dialectal transition zone with so much areal variation (not to mention the rapid changes that have taken place to the language in modern times), the situation warrants investigation. Discrepancies between what the linguistic atlases report and what is actually observed in Bitburg in this study could be a symptom of a shift in language norms. While the study specifically investigates the speech of twelve participants, a number that cannot be used statistically to make generalizations about the community (and truly prove a case of language shift, should it exist), the information about the participants' individual language usage is nonetheless of great value for several reasons.

First, this study investigates language in its natural state. Older studies, such as the German language atlas project, often relied on self-reported questionnaires with pre-determined sentences that would 'script' the language; also, these were merely written down, not recorded, leaving us with no acoustic evidence. This study utilizes free-flowing, spontaneous speech – arguably the most accurate representation of how humans truly use language.

Second, in this study, subjects are asked to participate both in interviews with myself and in conversations with close friends/family. The use of recordings and free-flowing speech is a major improvement over using scripted and/or written data, but perhaps the most crucial aspect of this study is the mitigation of the interviewer effect

(i.e. observer's paradox) in the second recorded session. While both the interview with me and the conversation with a close friend or family member involve the aforementioned spontaneous speech, the conversation without my presence is much more likely to accurately reveal how participants interact within the community than their speech in an interview with me (an outsider, despite my close ties). The fact that both situations are accounted for here can reveal a tremendous amount about the dynamics of their language use, both with outsiders and insiders.

Third, this study offers a very in-depth look at individual language use among the participants. Studies with an emphasis on breadth (as opposed to depth), such as the German language atlas project discussed in Chapter 2, can be of great merit and provide valuable information, but a deeper investigation such as this can reveal information that is often overlooked or completely missed in the former type. The trade-off between the two sides of the breadth/depth continuum is thus one that must be considered with any project. While this particular study's approach may not reveal as much quantitatively as other approaches might, it can answer some questions that more touch-and-go methods might not. In addition, acoustic analyses have rarely ever been conducted with socio-phonetic studies, as the sheer amount of data usually demands auditory coding. Acoustic analyses are usually confined to laboratory speech. Thus, this study is unique in this regard, especially in Germany.

Finally, in relation to the last point, the in-depth approach that this study takes may reveal more than simply whether or not the participants have merged (d) and (t) in their speech: it could possibly point out some information about the nature of the contrast discussed above that would not normally be considered in a sociolinguistic study that was

conducted with, say, auditory coding instead of acoustic analysis. For example, though Bitburger Platt is said to have the merger, the participants may still exhibit a (d/t) contrast that does not perfectly mirror what a speaker of English or another German dialect would expect (i.e. strong aspiration on a [t]). In short, much can be determined with a study such as this where other methods might fall short.

In this chapter, I have discussed some of the features of the Moselle-Franconian area and the fortis/lenis contrast, the possible ways of realizing such a contrast, and how this can be investigated. Having stated the research questions and the reasons why this investigation is needed, I now turn to the specifics of my fieldwork and the methodology of the measurements used in the experiments of this study.

CHAPTER 4

FIELDWORK AND ANALYSIS METHODOLOGY

With an understanding of the specifics of the variables under investigation and the research questions I seek to answer, let us now turn to the details of the project itself. In this chapter, I describe the procedure of the fieldwork I conducted in the summer of 2010, as well as the specifics of which participants were selected for acoustic analysis and the reasons for choosing them. Following this, I describe the details of the analysis and briefly discuss the results thereof. A more thorough discussion follows in the next chapter.

4.1 Fieldwork and Participant Selection

The data for this study come from a corpus of recorded interviews I conducted in the summer of 2010 in Wiersdorf and other nearby villages on the northwest side of Bitburg. Upon my arrival, I informed my host family that I was looking for people aged 18+ who had spent the majority of their childhoods in (and were current residents of) the Wiersdorf area (roughly a 5-km radius[20]). The family informed their neighbors, friends,

[20] Venturing more than five kilometers outside this zone, specifically to the north, would take one into a heavily forested upland called the Eislek by the locals, which is, among other things, known for being very different linguistically. For example, there is a general weakening of (g) to [j] in nearly all environments.

and relatives, and within a few days I had a list of people who wished to participate. While there were thirty-two participants in total, they were not evenly distributed among the three age ranges and between the two genders: there were more women than men and more younger participants than older ones. However, the numbers were sufficient to conduct the analysis described below.

All participants took part in an interview (recorded on a Zoom H4 digital recorder), in which I first asked for some of their basic demographic information (birth year, education level, etc.) and then proceeded with a variety of questions about their daily life, family, opinions about certain issues, and several other topics. Far from an interrogation session, the questions were intended to stimulate a free-flowing conversation that could shift from topic-to-topic, although some of their answers were important in learning some qualitative information about their life and village dynamics. After the initial interview, I asked the participants if they would be willing to take part in an optional conversation with another community insider, either at that time or later when it was more convenient. As mentioned in the previous chapter, the purpose of this conversation was actually to elicit a second, comfortably spoken vernacular speech style that would more likely bear the features of Bitburger Platt, if these existed in their speech.

For the second session, I told the participants that they were free to discuss whatever they wished (though I left a list of possible topics to stimulate discussion in case their own conversation ran dry). I activated the recording device and left the room for a prenegotiated amount of time, similar to the procedure used by Stuart-Smith (1999). The ideal situation, of course, would be to have the same person to assist in conducting

the second part each time. As it turned out, this was not feasible in my situation, and the volunteer who conversed with the participant in the second recorded session was a different person in most cases. This fact cannot be ignored when analyzing and comparing the data from those conversations. However, two important constants applied to all of the second sessions: the second volunteer was a village insider who knew the participant well. Most participants agreed to participate in this second part; those who showed apprehension about it were not pressured to change their minds.

Following the collection of data, twelve participants – two to fill each age/gender cell – were chosen for analysis based on two criteria. First, they all had similar backgrounds that included being born in the Bitburg area, attending school elsewhere, and then choosing to return to the Bitburg area permanently. These participants' interviews and conversations then underwent acoustic analysis in PRAAT, where a fifteen-minute segment of each recording was extracted for examination. These fifteen-minute segments were demarcated at the five-minute mark so that the initial formalities could be skipped over, as they often lacked substantial speech streams. Exceptions to this rule were made only in a handful of cases when the total recording duration was less than twenty minutes.

All eligible instances of (d) and (t) were analyzed for whatever phonetic parameters applied in their specific environments, and each measurement (with the exception of Harmonic difference, discussed below) was taken in a 300-millisecond window. The spectrogram settings were the PRAAT default, such that the dynamic range (i.e. decibels) was 70 dB, and the frequency range (i.e. Herz) was from zero to 5,000 Hz.

4.2 Acoustic Analysis Parameters

In this section, I describe the specific techniques used for the analysis of tokens in all three major acoustic correlates investigated here. The first two, *voice onset time* and *harmonic difference*, are those dealing with tokens occurring before a stressed vowel (usually word-initial, but sometimes word-internal, as shown below). The remaining one, *closure duration*, deals with medial consonants (i.e. ambisyllabic or syllable-initial before unstressed vowels).

4.2.1 Parameter 1: Voice onset time (VOT)

For the purposes of this study, VOT is measured here as the temporal duration in milliseconds between the stop release and the onset of F2 in the following vowel. Following Klatt (1975), Jessen (1998), and Thomas (2011), I primarily utilized the spectrogram for measurements in this study, using the waveform only for secondary confirmation of those readings (though others, including Künzel (1977) and Braun (1988), define VOT based on the waveform). VOT measurements were taken of all tokens where a word-initial or word-internal (t) or (d) immediately preceded a stressed vowel (ex. *Tanne* 'pine', *dann* 'then'; *verderben* 'to rot/decay', *verteilen* 'to deal sth. out'). Syllable-initial /ʃt/ clusters (ex. *Stunde* 'hour') were excluded, as German phonotactics forbid any possible /ʃd/ clusters with which they could contrast (much the same as in English, where this cluster is formed with [s-] instead).

In determining the moment of closure release, the cursor was placed at the beginning (i.e. the left edge) of the dark vertical line in the spectrogram indicative of a stop release, after which a PRAAT command was used to move the cursor to the nearest

zero crossing in the waveform. If multiple release signatures were present, the measurement was made from the release that came last[21]. Shown in Figure 4.1 is a measurement of VOT in the word *dann* 'then,' spoken by a middle-aged male.

The greatest challenge in determining the end of aspiration (i.e. the VOT) presented itself in instances where the onset of the vowel appeared to be very gradual. The problem exists regardless of how one conducts the analysis: if basing measurements on the waveform, the researcher is confronted with a very low amplitude – yet clearly periodic – signal that gradually strengthens over several periods; if using the spectrogram for the same segment, one would see a barely-visible F2 that gradually darkens (i.e.

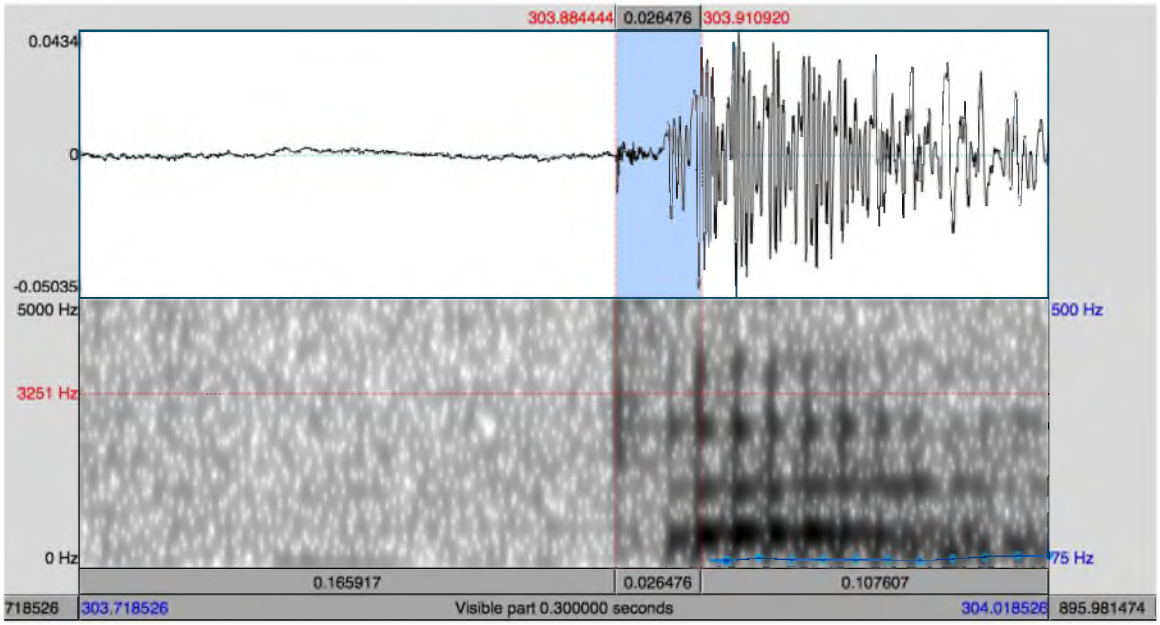


Figure 4.1: VOT of 26ms in *dann*; definition relatively easy

[21] While Cho and Ladefoged (1999) prefer selecting the final release signature in the case of multiple releases, this method is not the only one possible; Khattab and Al-Tamini (2008), for example, measure from the release with the highest amplitude. More important than the method one selects, however, is the consistent application thereof: the researcher must employ the chosen method – and only that method – throughout the analysis.

increases in amplitude) from pulse-to-pulse (see Figure 4.2). There were several instances where multiple pulses lay between the first hint of F2 onset and the full darkening thereof. The method I employ is based on visual impression, recommended by Jessen (personal communication, 2011). A darkness criterion was selected based on the F2 darkness at the VOT in clearer examples and then applied to these more gradual ones. Also, the segment was played and analyzed by ear multiple times. If visual criteria and auditory analysis combined were not enough to produce a conclusive result, the token was excluded. Shown in Figure 4.2 is an example of a difficult case, where the vowel after the [d] in the phrase *Sie spricht kaum Dialekt* 'she hardly (ever) speaks dialect,' spoken by the same middle-aged male, has an F2 that is seemingly absent from the first glottal pulse; this is also an example of multiple release bursts[22], where the second and final one has been selected as the zero point.

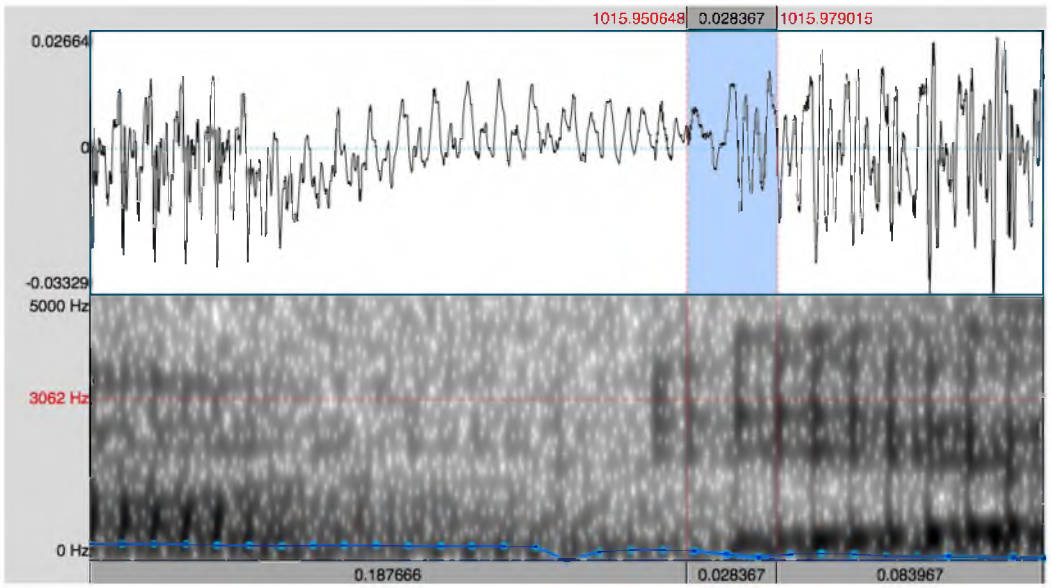


Figure 4.2: VOT of 28ms in *Dialekt*; definition difficult due to lack of F2 in first pulse

[22] The first 'release burst' here may very well be the opening of the lips from the nasal [m] that precedes the [d], but there is not enough evidence to state this with certainty.

Obviously, variation in amplitude must be taken into account, for the darkness of a vowel occurring in a speech where the speaker, say, trails off at the end of an utterance can be much less than in one occurring in intense, excited speech. While these measurement criteria are, admittedly, more subjective than other more mathematical criteria one can use for this, such methods are not feasible to employ for the number of tokens in this study.

4.2.2 Parameter 2: Harmonic difference (H1-H2)

The parameter of harmonic difference involved the most time-consuming work of all. Unlike the other 2 parameters, H1-H2 required not only the use of the spectrogram screen, where the horizontal dimension is time and the vertical is frequency, but also of a DFT spectrum where the y-axis is a measure of decibels and the x-axis is frequency. These measurements were only conducted for stressed vowels that followed an alveolar stop. Thus, the (i:) in *aktiv* 'active' would be a candidate, but the (ə$^{\text{ɐ}}$) in *Mutter* 'mother' would not. While definite articles oftentimes do not receive stress and sometimes cliticize onto the following noun, for the purposes of this experiment they were considered stressed and therefore were candidates as long as they had visible vowel formants.

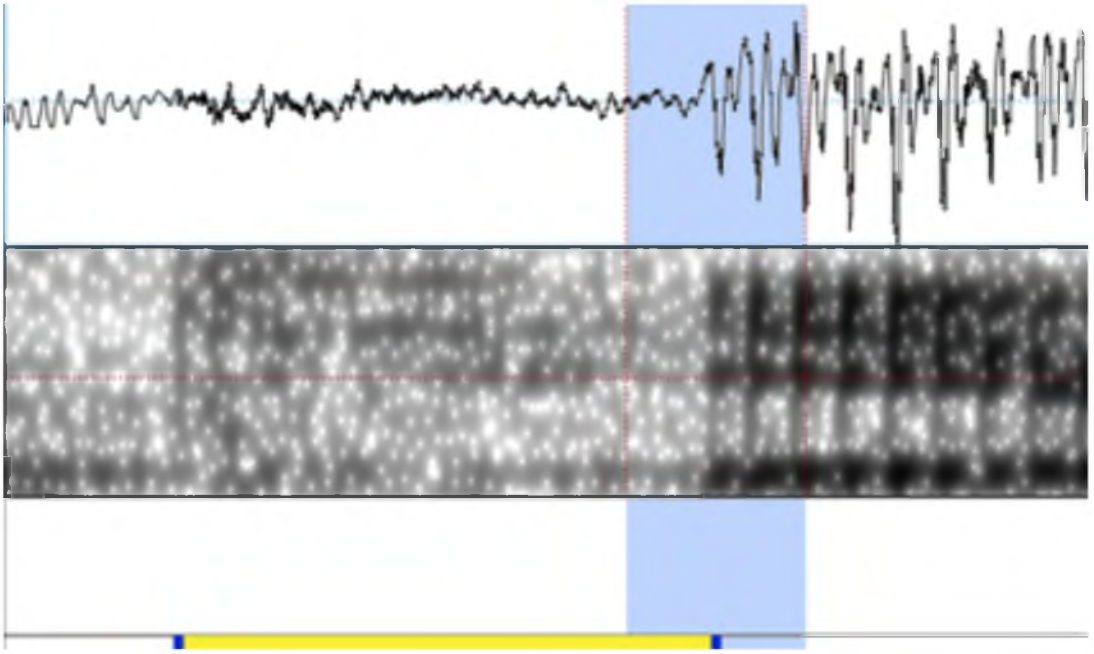
The process first involved locating the onset of the vowel in the spectrogram window. As the candidates for this experiment – without exception – also had aspiration measurements taken, the first step was completed by virtue of having measured that parameter. After placing the cursor on this boundary, the area 15 ms to the left and right of the boundary was highlighted, yielding a 30 ms duration. Then, a spectral slice of this area was taken, whereupon the DFT spectrum was opened to display the cross section of

the spectrum. The DFT spectrum in Praat displays a line on the graph that rises and falls according to the dB at a given frequency. Under ideal measuring conditions, H1 and H2 are visible as peaks on this line, where H2 is exactly double the frequency of H1. However, these clear-cut cases were the minority. More often than not, one of the harmonics was visible as a peak, while the other would actually be a noticeable change in the slope of the line (not a peak) at the point where it mathematically had to be located. If the H2 was the elusive harmonic, I simply measured the dB value at a frequency double that of H1, where there would usually be the aforementioned slope change. In instances where the H1 was not visible, this harmonic was simply calculated in the waveform as a reciprocal of the duration between the peaks of the first two glottal pulses, as H1 is merely the fundamental frequency.

After locating the two harmonics, the dB value of H2 was subtracted from that of H1, yielding the parameter measurement. The number could be either positive or negative, depending on whether the H2 value was smaller or larger than H1. The beginning of the word *Thema* 'theme' in the speech of a young male with a 30 ms highlighted area is displayed in Figure 4.3(a); the resulting DFT spectrum, where the H1-H2 difference was calculated to be 0.4 dB, is shown in Figure 4.3(b). Ironically, this is an example of a word that had to eventually be disqualified because of its non-German origin.

At times, this measurement could not be conducted for certain tokens because of its sensitive nature; where VOT can usually be calculated, even with a bit of background noise or if the speaker is using a quiet register, these adverse conditions can obscure the harmonic difference measurement. As such, not all tokens for which VOT was measured

(a)



(b)

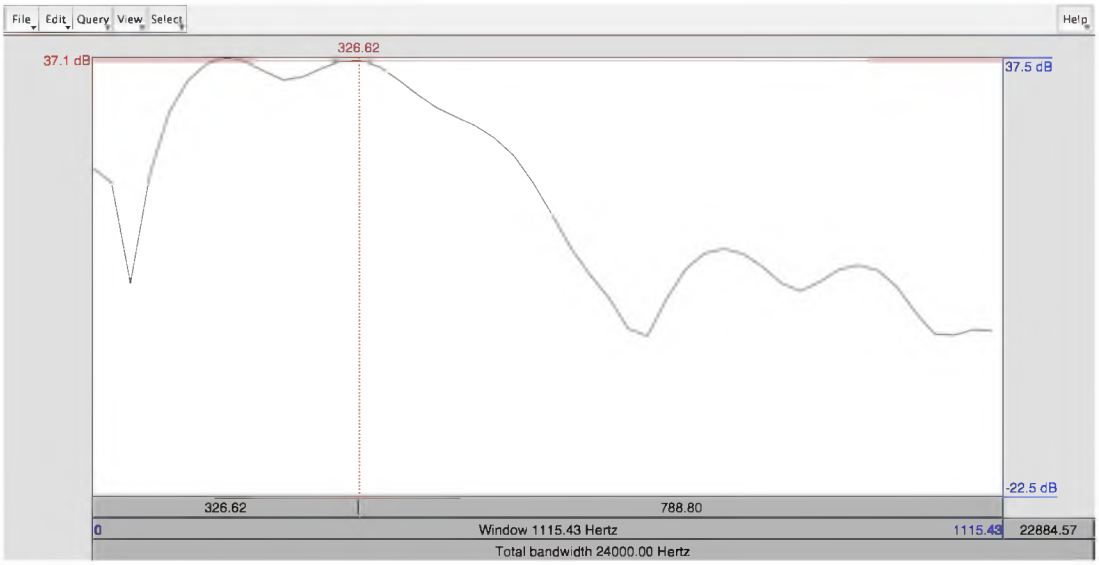


Figure 4.3: Spectral slice of onset of [e] in *Thema*; (a): spectrogram showing [t] and vowel, with 30ms window; (b): DFT spectrum: H1 = 37.5; H2 = 37.1; H1-H2 = .4 dB

correspond to one in which a harmonic difference measurement was taken, even though these should theoretically always line up, as noted above.

4.2.3 Parameter 3: Closure duration

In the environments studied, a measurement of closure duration always followed that of a vowel. In this study, intervocalic position was the sole environment in which this parameter was measured. An intervocalic (d) or (t) would almost always exhibit an audible closure and release; apparent exceptions exist in instances of nasal plosion, found in words such as *leiden* 'to suffer' and *leiten* 'to lead'. This phenomenon is found in English as well; rarely would a native English speaker release the (d) in *hidden* or *mitten*. In addition, it can be argued that these are not truly intervocalic. Such tokens were excluded from analysis here.

As all instances of closure measured in this study involve postvocalic positions, the vowel's termination essentially demarcates this. A vowel terminates when the upper formants suddenly disappear or become drastically reduced in darkness (even though the fundamental frequency may still be quite dark); the waveform corroborates this in a noticeable decrease in amplitude. A boundary was placed at the end of the glottal pulse deemed to be the last with significantly dark upper formants. The end of the closure occurs at the stop release, visible as a dark vertical line. In measuring this, a boundary was placed at the left edge of this dark vertical line. These measurements occasionally ran into the same issues encountered with VOT, namely multiple releases. In such cases, the same technique was employed in determining the boundary. Displayed in Figure 4.4 is the closure measurement for the intervocalic [t] in the word *tätig* 'active'. As discussed

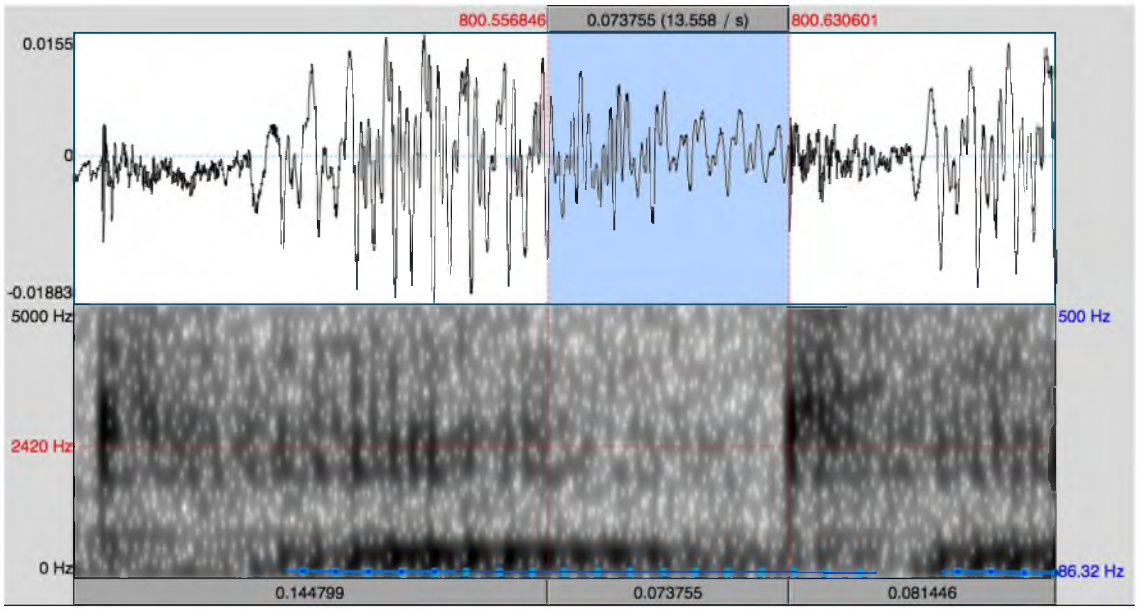


Figure 4.4: Closure duration of 74ms in *tätig*

above, the termination of the [e:][23] vowel is clearly visible when its upper formants die at the beginning of the highlighted area covering the closure. The highlighted area ceases at the release of the second [t], clearly visible as a dark line.

Not all cases of measuring closure were as clear-cut as the descriptions here make them out to be. There were instances where, due to an echo in the room or intervening background noise, the boundary was hard to determine. There were also instances where the token was pronounced with minimal constriction or deleted. Other strange phenomena presented themselves as well, such as the breaking of [t] into [kt], a process known to affect intervocalic [t] in a very narrow band of territory in this area (discussed at length in subsequent chapters). In all such cases, the token was excluded.

[23] This vowel is actually pronounced as the long lax vowel [ɛ:] in some Standard German varieties that retain a distinction between [e:] and [ɛ:].

4.3 Ensuing Steps

Upon completion of the acoustic analyses described above, the data were scoured for words that were not of Germanic origin (using Kluge's etymological dictionary), as the merger in question is only known to affect these tokens. Once combed, the data were handed to a statistician for analysis, discussed at length in the coming chapter.

CHAPTER 5

RESULTS

This chapter presents and discusses the results of the experiments described in the previous chapter. The acoustic parameters are organized according to position in the word. The first environment in question is stem-initial, which could also be called "stressed" position, as German phonotactics dictate that stress – primary, or at least secondary – must fall here (for further detail on environment, see the methodology section of Chapter 4). *Voice onset time* and *harmonic difference* are the parameters measured in this environment.

The second environment is intervocalic position after stressed vowels, where *closure duration* is discussed. After presenting the statistical results for each of these parameters, I conclude this chapter with brief discussion of what these results – at face value – appear to indicate, and I provide answers to the research questions formulated in Chapter 3. Reflections, further implications, and conclusions are reserved for the following chapter.

5.1 Stem-initial/Stressed Position

5.1.1 Voice onset time

As laid out in Chapter 3, previous studies have found VOT to be an important parameter in distinguishing fortis/lenis plosives in German. Displayed in Table 5.1(a-b) are the aspiration values in milliseconds and number of tokens present of (d) and (t) in stem-initial position. Numbers that are not in bold indicate that there is no statistical evidence of a merger for the participant in this position/setting (discussed below); bolded numbers indicate that the differences between (d) and (t) values for the feature in question are not significantly different and *do* corroborate a merger.

Table 5.1: VOT values; (a): women's VOT data; (b): men's VOT data

(a)

Female _V[+stress]	Interview				Conversation			
	(d)		(t)		(d)		(t)	
	ms	#	ms	#	ms	#	ms	#
Young A	17.86	74	62.83	12	**17.45**	**76**	**19.67**	**9**
Young B	14.58	74	65.82	17	**14.5**	**62**	**16.43**	**14**
Middle A	14.79	112	63.45	29	**16.04**	**73**	**15.5**	**10**
Middle B	18.49	92	79.78	9	**13.99**	**87**	**10.75**	**12**
Older A	16.45	79	64.67	9	**15.42**	**48**	**17.8**	**15**
Older B	26.78	67	68.94	16	**24.3**	**83**	**28.36**	**11**

(b)

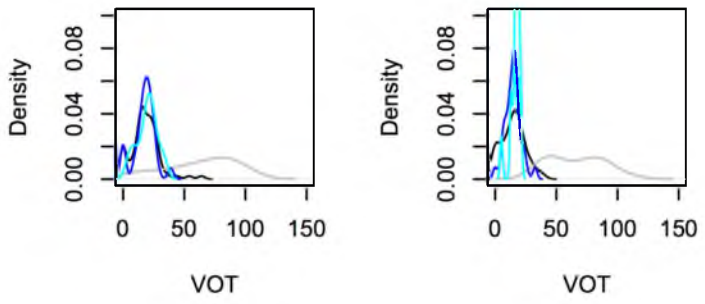
Male _V[+stress]	Interview				Conversation			
	(d)		(t)		(d)		(t)	
	ms	#	ms	#	ms	#	ms	#
Young A	20.84	63	61.5	8	**20.74**	**68**	**19**	**9**
Young B	22.23	111	81.39	18	**18.24**	**104**	**19.08**	**13**
Middle A	19.5	104	77.12	17	**21.56**	**54**	**15.83**	**12**
Middle B	25.08	107	75.13	32	**20.63**	**65**	**23**	**9**
Older A	**17.88**	**81**	**18.57**	**14**	**22.59**	**62**	**21.71**	**10**
Older B	15.22	130	39.75	12	**14.71**	**76**	**20**	**6**

In interview speech, all but two participants make a clear distinction between the fortis and lenis consonants in this environment, with the former being strongly aspirated while the latter exhibit only a short voicing lag. The two exceptions to this pattern were the older males, whose (d) and (t) values were not nearly as distinct as the others, if at all. In conversational speech, on the other hand, all but two participants' speech exhibited (d) and (t) sounds differentiated by less than five milliseconds of aspiration, and in this case, the exceptions to the pattern did not stand out nearly to the degree that the older men did in interview speech.

Let us now examine the statistical results for the participants as case studies. The graphs in Figure 5.1 (a-f), constructed in the program *R* as part of the significance tests, show the VOT in milliseconds on the X-axis, while the Y-axis shows the density of the tokens clustered at the corresponding VOT values. The black and grey lines indicate the clustering of (d) and (t) values in interview speech, respectively, while the dark and light blue lines indicate (d) and (t) tokens in conversation speech. Each graph represents one speaker; below each graph are the corresponding p-values of the Mann-Whitney-Wilcoxon test for differences *between* (d) and (t) in the interview and conversation, as well as tests for differences *within* (d) and (t) between interview and conversation speech for the sake of comparison (though the former test is the most critical for our purposes). Bolded numbers, as in the tables above, indicate a p-value of greater than .05, a commonly recommended threshold for significance (or *non*-significance for our purposes).

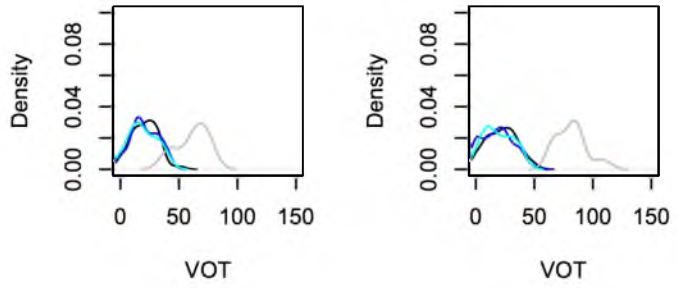
Corroborating what was listed in the charts in (1), every speaker (except for older male A) has highly significant differences between (d) and (t) in interview speech, while

(a)



Participant =>	Young female A	Young female B
d-t interview	p < .0001	p < .0001
d-t conversation	**p = .4**	**p = .072**
Int-con d	p = .82	p = .81
Int-con t	p = .0049	p < .0001

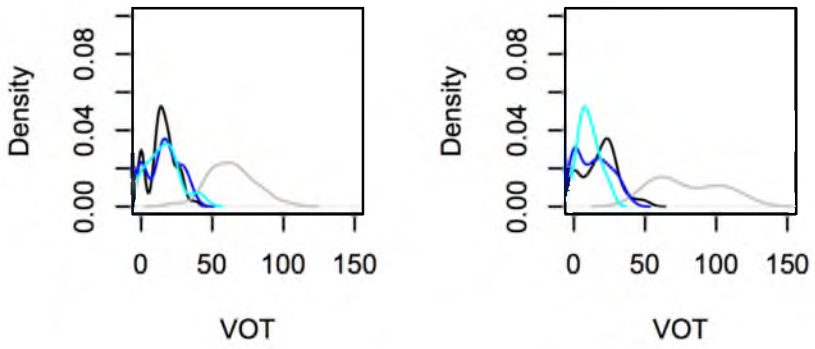
(b)



Participant =>	Young male A	Young male B
d-t interview	p < .0001	p < .0001
d-t conversation	**p = .64**	**p = .84**
Int-con d	p = .98	p = .034
Int-con t	p < .0001	p < .0001

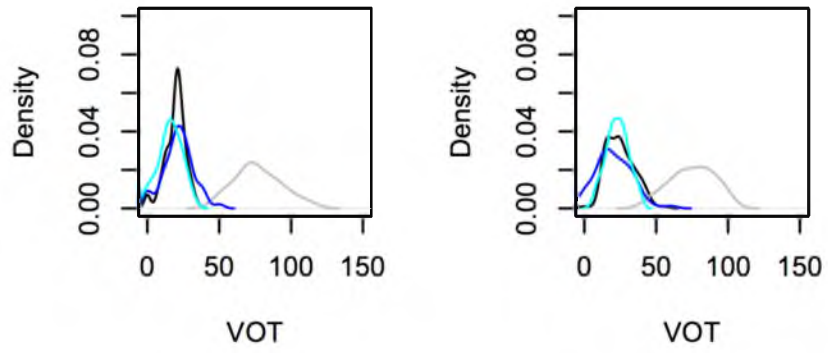
Figure 5.1: VOT kernel density plots; (a): Younger women; (b): Younger men; the graphs in (a-f) are representative of the age/gender cells in the charts directly below them. As per the y-axis description, the lines represent the kernel densities of the clustering of the tokens at a given VOT, not token counts. In (a-e), the interview (t) represented by the light grey line has the widest range of values, due to strong aspiration in this environment; compare these to the values for older men in Figure 5.1(f)

(c)



Participant =>	Middle-aged female A	Middle-aged female B
d-t interview	p < .0001	p < .0001
d-t conversation	**p = .83**	**p = .49**
Int-con d	p = .28	p = .023
Int-con t	p < .0001	p < .0001

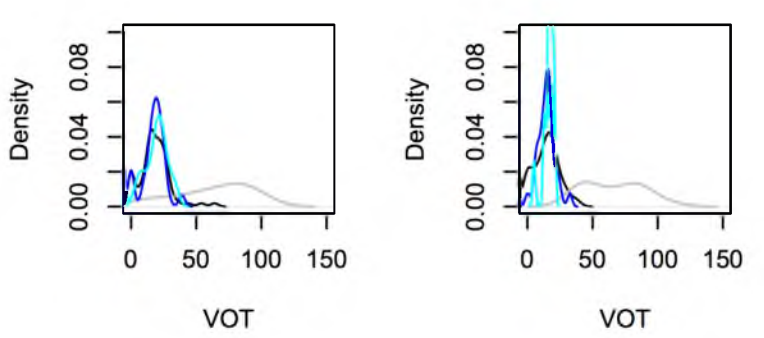
(d)



Participant =>	Middle-aged male A	Middle-aged male B
d-t interview	p < .0001	p < .0001
d-t conversation	**p = .058**	**p = .44**
Int-con d	p = .19	p = .011
Int-con t	p < .0001	p < .0001

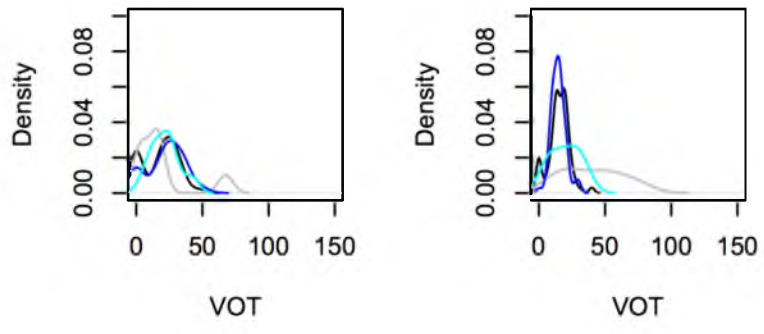
Figure 5.1: continued; (c): Middle-aged women; (d): Middle-aged men

(e)



Participant =>	Older female A	Older female B
d-t interview	p < .0001	p < .0001
d-t conversation	**p = .23**	**p = .19**
Int-con d	p = .31	p = .25
Int-con t	p < .0001	p < .0001

(f)



Participant =>	Older male A	Older male B
d-t interview	**p = .28**	p < .0001
d-t conversation	**p = .62**	**p = .26**
Int-con d	p = .04	p = .21
Int-con t	p = .13	p = .09

Figure 5.1: continued; (e): Older women; (f): Older men, displayed here, reveal a different pattern from those above. In line with the chart in 5.1(b), Older male A has overlapping densities (with one outlier near 60ms). Older male B's interview (t) values, on the other hand, were not statistically merged, although they were significantly less than all other participants except his folder male counterpart.

conversation speech shows very little difference between the two sounds. Note that for middle-aged male A, differences between (d) and (t) in conversation speech might appear to be approaching significance at .058. However, as Table 5.1(b) indicates, it is actually his (d) that has the higher VOT in this case, rather than the other way around as one might expect. He thus conforms to the pattern of having significantly higher VOT values for (t) than (d) in the interview but not in the conversation.

Returning to older male A, our one participant who does not conform to this pattern, we see values that do not even approach significance. Note that while his counterpart, older male B, does not exhibit a statistical merger, his (t) values in interview speech are much lower than those of the ten participants in the other age/gender classes. Consistent with this, his test for differences between interview (t) and conversation (t) shows a value approaching nonsignificance, while the other ten participants show values less than .0001.

To further illustrate the effect of the two older men on the results as a whole, Figure 5.2 shows the amalgamated values of all female and male participants on the left and right, respectively. As expected, the interview (d) and conversation (d) and (t), in both male and female participants, are stochastically identical, while the interview (t) stands clearly distinct. However, the male interview (t) exhibits a small hump underneath the high-density zones of both (d)s and the conversation (t). This hump is the product of the older men, whose interview speech contained many nonstandard features, including unaspirated (t).

A look at the participants' values categorized by age confirms this; Figure 5.3 displays the amalgamated young participants' values on the left, the middle-aged in the

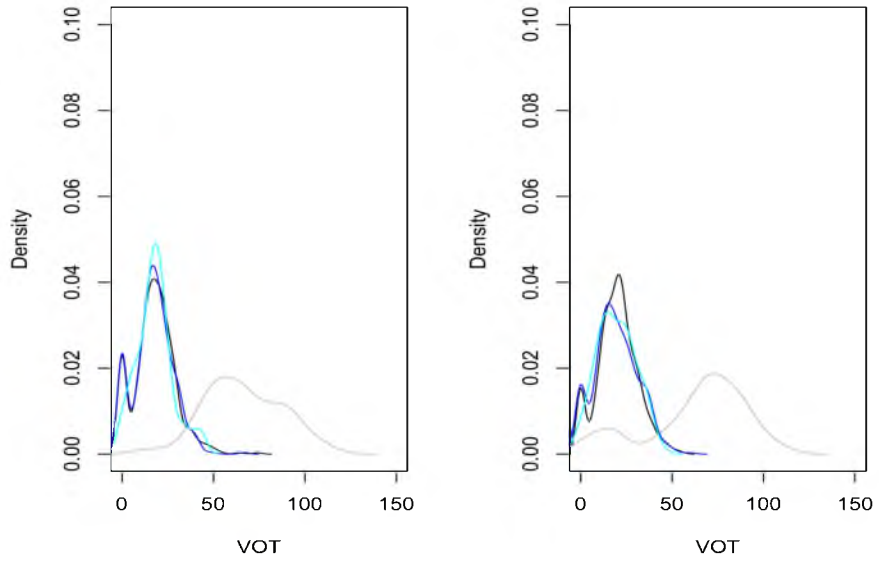


Figure 5.2: Participants' VOT by gender: females left, males right

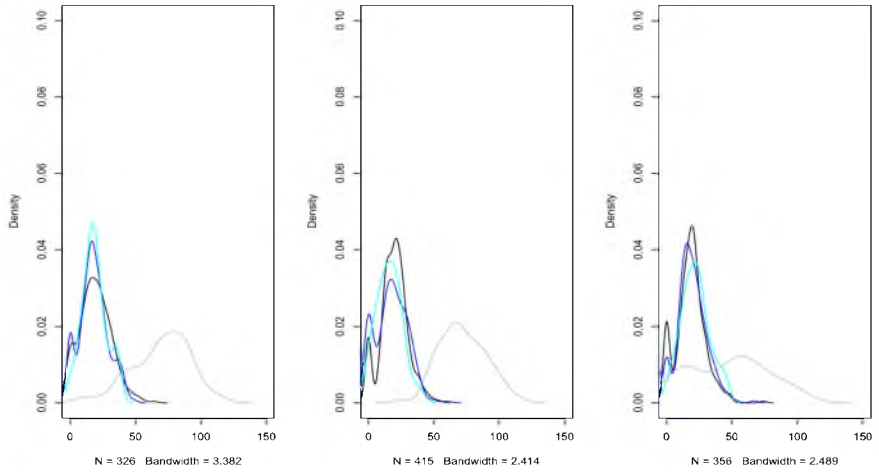


Figure 5.3: VOT by age: young to the left, middle in the center, and old to the right

center, and older on the right. Once again, a small hump is visible in the older participants' interview (t) values, representing the older men's deviations from the rest of the participants.

In sum, most participants show great differences in VOT patterns between interview and conversation speech, indicating it is a salient marker of dialecticity. In

interview speech, younger and middle-aged participants seem to avoid conflating the VOT of (d) and (t), while in conversational speech with no interviewer present, the differences in the VOT of the two sounds are not significantly different from each other. Older male A is the exception to this rule, conflating the VOT of (d) and (t) in both interview and conversation speech.

5.1.2 Harmonic difference (H1-H2)

Unlike the other acoustic parameters in this study, which are durational in nature, harmonic difference is a measurement of the difference in decibels between the first and second harmonics in the onset of a stressed vowel. Specifically, this study examines the difference between the first and second harmonic (H1-H2) in those vowels which directly follow a stem-initial (d) or (t). Let us first look at the participants' mean values, shown in Table 5.2 (a-b).

Although these should in theory be the exact same stops that were analyzed for VOT, a careful reader will notice that the token counts here do not match those for VOT. This is because the measurement of this parameter can be much more difficult to conduct under certain conditions than the previous one, and in some cases, a token had to be excluded because the harmonics simply could not be identified. As per the nature of sociolinguistic studies (or any studies investigating language in its natural environment), the conditions under which these interviews and conversations were recorded were not always ideal. Various background noises were occasionally the sources of the problem, but more often than not, it was a simple matter of volume: the participant did not speak loudly enough or did not project his or her voice directly toward the recording device.

Table 5.2: H1-H2 values; (a): women's H1-H2 data; (b) men's H1-H2 data

(a)

Female H1-H2	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	dB diff.	#	dB diff.	#	dB diff.	#	dB diff.	#
Young A	-2.17	66	5.17	11	**3.44**	**49**	**5.48**	**10**
Young B	-2.37	53	5.09	16	**-2.69**	**39**	**0.3**	**11**
Middle A	-0.94	80	6.2	22	4.62	29	-1.2*	1
Middle B	-4.33	70	6.91	8	1.01	66	7.52	6
Older A	0.32	70	8.39	8	**-0.1**	**41**	**-3.4**	**9**
Older B	5.05	48	9.59	14	2.64	66	X*	0

* Tests invalid due to low token count

(b)

Male H1-H2	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	dB diff.	#	dB diff.	#	dB diff.	#	dB diff.	#
Young A	**-0.85**	**53**	**-1.13**	**6**	**-6.74**	**53**	**-8.21**	**8**
Young B	-3.03	80	-0.26	17	-5.56	61	-0.15	25
Middle A	-2.74	55	-0.1	10	**-1.46**	**33**	**-0.79**	**7**
Middle B	-3.34	79	-0.11	31	**-3.41**	**50**	**-2.27**	**21**
Older A	**-0.99**	**66**	**-0.18**	**10**	**-1.64**	**21**	**1.28**	**5**
Older B	**0.15**	**116**	**1.25**	**12**	**-1.5**	**62**	**1.45**	**4**

Given this, some speakers have lower token counts for this parameter than for VOT, most notably middle-aged female A, whose (t) in the conversation has ten tokens for VOT but only one for harmonic difference. VOT is comparatively easy to identify, even if the participant is quieter.

Recall that according to Jessen (1998), the first harmonic in a vowel after aspirated consonants (in many varieties of German, the fortis class) is expected to have a higher decibel value than the second under normal circumstances, while after lenis consonants the values should be much closer together. At first glance, the women's numbers in the interview appear to be the only ones holding to this, while the men's

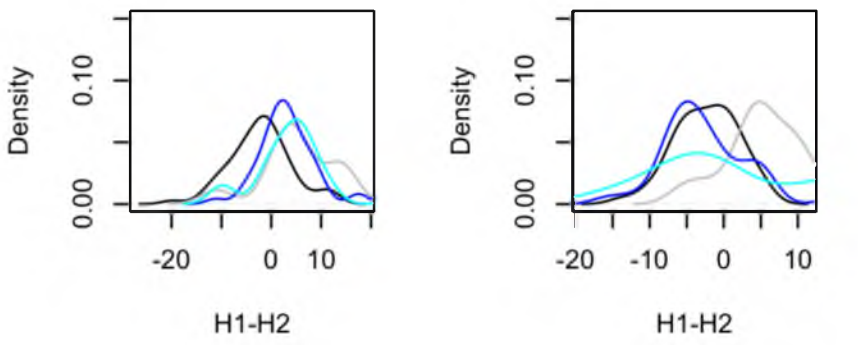
appear somewhat haphazard. There is a caveat that must be mentioned, however. Jessen explains that creaky voice (as opposed to modal voice) can actually cause the expected numbers to invert, and as it turned out, several of my male participants exhibited a creaky voice. Before discussing the results, let us examine the statistical tests for the individual participants, visible in Figure 5.4(a-f); as in the previous section, bolded numbers indicate non-significant differences between (d) and (t).

All female participants exhibit significant differences in the expected directions for interview speech. In conversational speech, however, we can only conclusively say that three of the females (Young A, Young B, and Older A) show nonsignificant differences. Two (Middle-aged A and Older B) must be excluded because of insufficient data on which to base a test. Middle-aged B's conversation values cannot be called merged with a value of $p = .035$, as our cutoff is .05. However, her conversation values do *trend in the direction* of significance when compared to her interview values, which are significantly different at less than .0001.

The men's results are slightly more complicated. On the one hand, the older men show no significant differences between (d) and (t) in the interview or conversation (mirroring the VOT results, where older male A exhibited no differences and older male B showed only small differences, rather than the stark ones the rest of the participants showed). The middle-aged and younger men also exhibit the expected merged values in conversational speech. In the interview, Young male B and the two middle-aged men show statistically distinct values for (d) and (t).

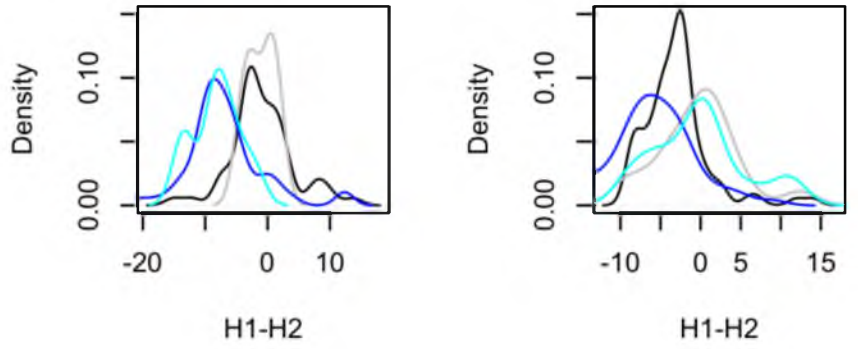
Young male A, however, brings an end to this seemingly perfect matchup with the VOT results. Recall that his VOT results in the conversation are distinct. His

(a)



Participant =>	Younger female A	Younger female B
d-t interview	p = .001	p < .0001
d-t conversation	**p = .39**	**p = .47**
Int-con d	p < .0001	p = .46
Int-con t	p = .059	p = .15

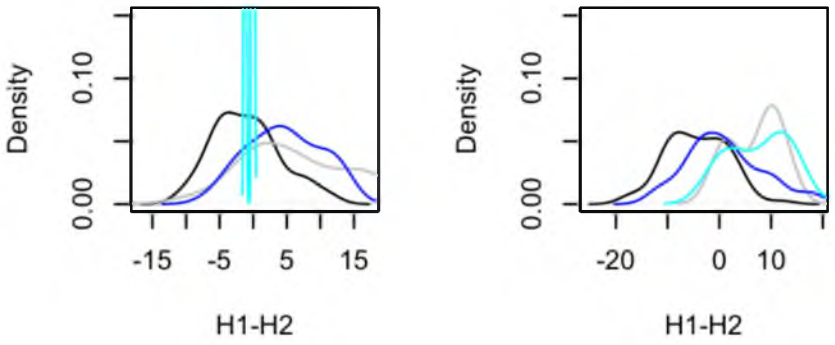
(b)



Participant =>	Younger male A	Younger male B
d-t interview	**p = .95**	p = .009
d-t conversation	**p = .72**	p < .0001
Int-con d	p < .0001	p = .0005
Int-con t	p = .003	p = .83

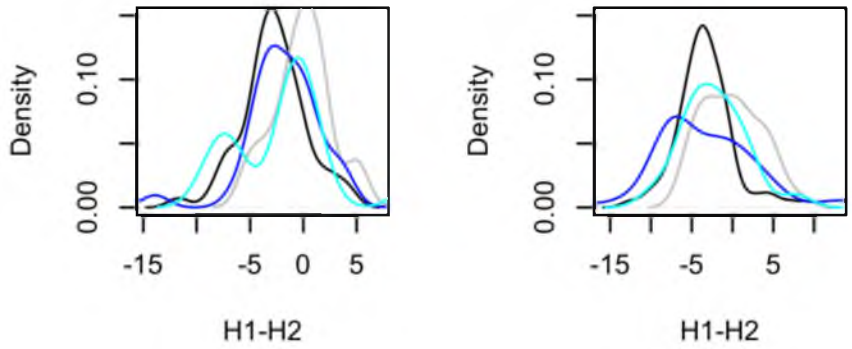
Figure 5.4: Kernel density plots for H1-H2; (a): Younger women; (b): Younger men; note that A's interview and conversation values indicate a merger, which is in opposition to his VOT data; this peculiarity is discussed below. Like the graphs above, the graphs here are kernel density plots. However, these display the differences between H1 and H2. The peak of interview (t), in most of these graphs, is centered to the right of zero, while the peaks of the three other sounds are clustered together to the left of zero (i.e. negative).

(c)



Participant =>	Middle female A	Middle female B
d-t interview	p < .0001	p < .0001
d-t conversation	p = .068 (invalid; only 1 token)	p = .035
Int-con d	p < .0001	p = .0001
Int-con t	p = .059	p = .69

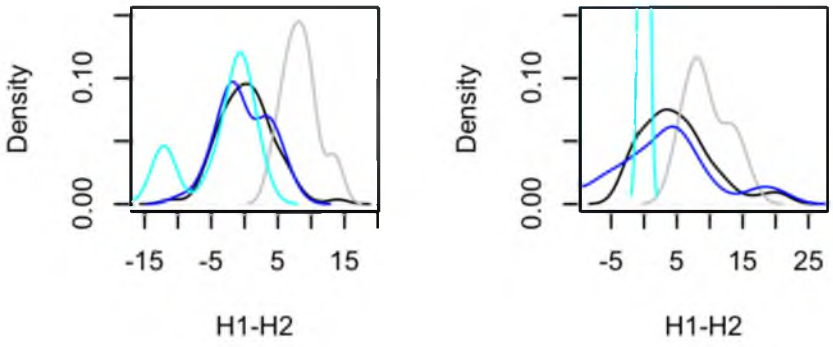
(d)



Participant =>	Middle male A	Middle male B
d-t interview	p = .016	p < .0001
d-t conversation	**p = .91**	**p = .25**
Int-con d	p = .07	p = .63
Int-con t	p = .46	p = .052

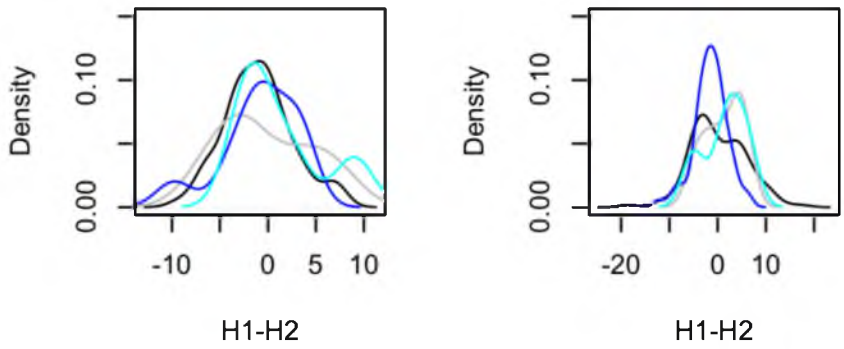
Figure 5.4: continued; (c): Middle-aged women; directly below and left, the light blue vertical lines represent A's single conversation (t) token; (d): Middle-aged men

(e)



Participant =>	Older female A	Older female B
d-t interview	p < .0001	p = .0009
d-t conversation	**p = .18**	p = .29 (void: no tokens)
Int-con d	p = .67	p = .11
Int-con t	p < .0001	p = .001

(f)



Participant =>	Older male A	Older male B
d-t interview	**p = .78**	**p = .4**
d-t conversation	**p = .67**	**p = .15**
Int-con d	p = .74	p = .12
Int-con t	p = .59	p = .9

Figure 5.4 continued: (e): Older women; note that B, who had no conversation (t) tokens, was artificially given one at zero so that the graph could be generated, as R cannot create graphs when a slot has no value; (f): Older men

harmonic differences in the interview, however, are not distinct statistically.

At this point, it may not be possible to determine why the one young male speaker's VOT data, which indicate a distinct (d) and (t) in interview speech, do not line up with his H1-H2 data, which suggests a merger. Despite this peculiarity, as well as the two women whose data had to be excluded, we can conclude from the remaining speakers that harmonic difference of vowels following (d) and (t) does correlate with a fortis/lenis distinction in this environment, and that the distinction is lost in conversation speech.

5.2 Intervocalic Position

5.2.1 Closure duration

As with aspiration, closure is a durational parameter. Unlike aspiration, however, this study measures closure duration only in intervocalic position. While it is possible to measure this parameter in final position as well, and while final consonants are certainly a heavily studied topic in linguistics (not confined to German), they are not within the scope of this study. Recall that fortis consonants are generally expected to exhibit longer closure than lenis ones. The participants' closure values are displayed in Table 5.3 (a-b), in which no merger is readily visible in any of the participants. For a more detailed inspection, the kernel density plots and statistical analyses are displayed in Figure 5.5.

Only one participant's results indicate a merger, namely those of Older Male A. However, while his differences between (d) and (t) do not pass the threshold of statistical significance, a measure of caution must be taken in interpreting these results. The count for his (d) tokens in both the interview and conversation was quite low (barely worthy of

Table 5.3: Closure duration values; (a): Female closure data; (b) Male closure data

(a)

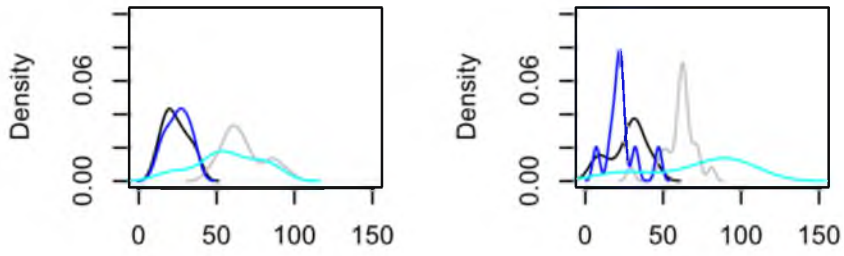
Female V_v closure	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	ms	#	ms	#	ms	#	ms	#
Young A	23.74	19	67.29	34	25	9	57	12
Young B	27.07	14	60.65	20	23.44	9	71.78	9
Middle A	24.62	26	61.69	63	25.4	10	59.09	23
Middle B	37.15	13	72.94	35	37.27	11	77.17	6
Older A	39.92	24	82.14	29	35	7	81	9
Older B	51.19	16	107.57	14	39.08	12	80	8

(b)

Male V_v closure	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	ms	#	ms	#	ms	#	ms	#
Young A	27.9	10	80.25	16	26.71	7	69.82	11
Young B	25.4	10	64.44	9	25.75	8	51.22	9
Middle A	36.61	23	65.23	39	41.78	9	64.5	12
Middle B	44.67	24	80.4	20	35.8	15	69.24	17
Older A	**43**	**6**	**65.9**	**21**	**33.5**	**4**	**54.93**	**15**
Older B	47	8	94.78	9	40	7	101.2	10

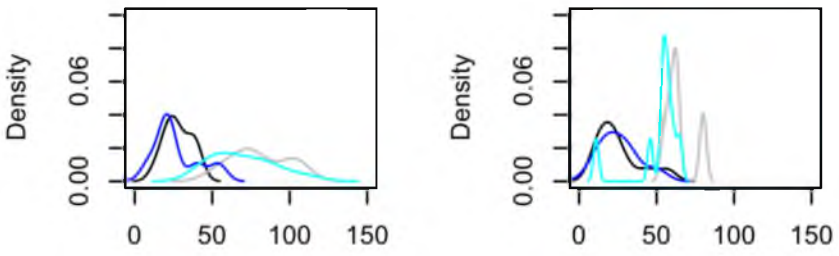
testing, in the case of the conversation). In fact, the number of intervocalic (d) tokens is rather small in most participants here when compared to the stressed/stem-initial environment. This is not solely due to a lack of words with intervocalic (d), but rather a lack of (d) tokens that actually surfaced as a plosive with measurable closure. Often, (d) underwent lenition (usually flapping) or complete elision (*oder* > [o:ɾəᵊ], [o:əᵊ] 'or'); (t) was also subject to these lenitions, but less frequently and mainly in conversational speech (e.g. *später* > [ʃpɪɾəɐ] 'later').

(a)



Participant =>	Younger female A	Younger female B
d-t interview	p < .0001	p < .0001
d-t conversation	p = .0009	p = .003
Int-con d	p < .0001	p < .0001
Int-con t	p = .13	p = .12

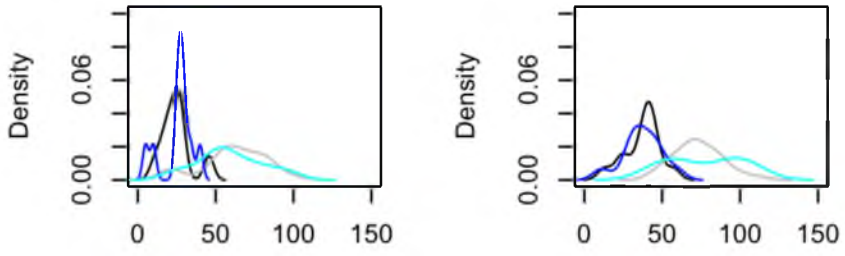
(b)



Participant =>	Younger male A	Younger male B
d-t interview	p < .0001	p = .0004
d-t conversation	p = .0004	p = .0081
Int-con d	p = .44	p = .78
Int-con t	p = .17	p = .033

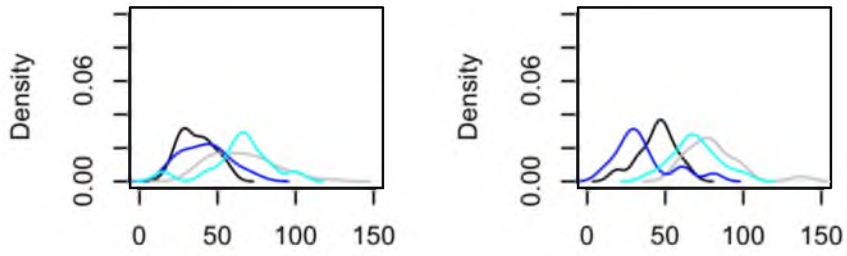
Figure 5.5: Kernel density plots for closure duration; (a): Younger women; (b): Younger men; In nearly every plot, the black interview and dark blue conversation (d) values are stochastically similar, clustering toward the left; meanwhile, the grey interview and light blue conversation (t) values mirror their longer closure durations to the right.

(c)



Participant =>	Middle-aged female A	Middle-aged female B
d-t interview	p < .0001	p < .0001
d-t conversation	p = .0002	p = .0022
Int-con d	p = .29	p = .98
Int-con t	p = .398	p = .71

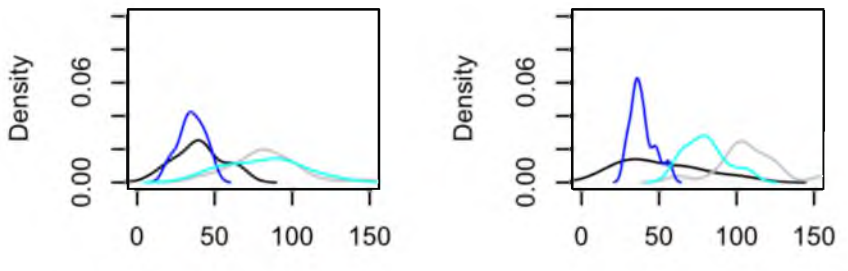
(d)



Participant =>	Middle-aged male A	Middle-aged male B
d-t interview	p < .0001	p < .0001
d-t conversation	p = .0093	p < .0001
Int-con d	p = .44	p = .033
Int-con t	p = .76	p = .067

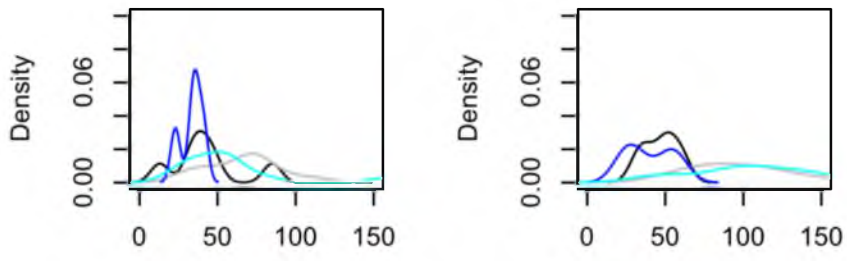
Figure 5.5: continued; (c): Middle-aged women; (d): Middle-aged men

(e)



Participant =>	Older female A	Older female B
d-t interview	p < .0001	p < .0001
d-t conversation	p = .0003	p = .0002
Int-con d	p = .45	p = .38
Int-con t	p = .99	p = .0062

(f)



Participant =>	Older male A	Older male B
d-t interview	**p = .07**	p = .002
d-t conversation	**p = .14**	p = .005
Int-con d	p = .48	p = .38
Int-con t	p = .086	p = .77

Figure 5.5: continued; (e): Older women; (f): Older men

5.2.2 Intervocalic anomalies

Due to the aforementioned lenitions and deletions, there are some cells in Figure 5.5(a-b) with few or no tokens. Table 5.4 (a-b), organized similarly to those above, show the instances of these lenitions for each participant. (d) is subject to lenition in both interview and conversation speech, though the interview does have slightly more instances of it. (t) in interview speech is far less likely to undergo deletion or lenition than in the conversation: only two participants (both older men) show any instances of it. In the conversation, however, both (d) and (t) are subject to it in the vast majority of participants. These phenomena may be largely confined to function words, as *oder* 'or'

Table 5.4: Lenitions and deletions; (a): female lenition/deletion data; (b): male lenition/deletion data

(a)

Female V__v	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	lenited	deleted	lenited	deleted	lenited	deleted	lenited	deleted
Young A	2	3	0	0	4	0	2	0
Young B	1	1	0	0	3	0	1	0
Middle A	1	0	0	0	3	1	1	0
Middle B	4	0	0	0	4	1	2	0
Older A	2	1	0	0	2	1	2	0
Older B	0	0	0	0	1	0	0	0

(b)

Male V__v	Interview				Conversation			
	(d)		**(t)**		**(d)**		**(t)**	
	lenited	deleted	lenited	deleted	lenited	deleted	lenited	deleted
Young A	4	3	0	0	2	1	1	0
Young B	6	2	0	0	2	0	1	0
Middle A	3	0	0	0	2	3	2	0
Middle B	0	0	0	0	3	1	0	0
Older A	2	2	4	2	3	2	2	1
Older B	7	3	2	2	3	1	1	2

and *wieder* 'again' were most commonly affected, but more evidence would be necessary to assert this with certainty.

Another important matter that must be addressed involves a breaking of the intervocalic segment in (t)-class words. Normally used in reference to monophthongs becoming diphthongs, I use the term 'breaking' here to describe a situation wherein an original intervocalic *d (which has become [t] in Standard German) has turned to [kt] in Bitburger Platt, turning what was a single intervocalic segment into a coda and an onset. An example would be W. Germ. *ru:de > Std. [Ro:tə], Bit. [Rʊ̲kt̲ə] 'red (fem.)' or *wi:der > Std. [vaitəɐ], Bit. [vɛ̲kt̲əɐ] 'farther/further'. Labeling this process a 'breaking' may seem somewhat problematic, as it actually appears to be 'splitting'. However, using the word 'splitting' for this process is problematic as well, since it has other historical linguistic connotations (i.e. the creation of a new phoneme when factors conditioning an allophone disappear). For the present study, I utilize the term 'breaking'.

According to the *Kleiner Deutscher Sprachatlas* (Veith, 1984-99), this is an extremely rare phenomenon in Germany, confined to narrow strip of territory between Bitburg to the south and the Ösling uplands to the north. Part of the historical explanation for this, given by Veith, is that this is a 'compromise' zone between dialects to the north (in which West Germanic *d changes to [k]) and those to the south, where the sound remains alveolar. While this phenomenon certainly warrants further investigation in and of itself, a more immediate concern is that it renders many commonly used modern-day (t)-class words (*heute* 'today', *leute* 'people', etc.) ineligible for analysis of closure duration, as it is no longer a single intervocalic segment, rather a coda plus an onset. Instances of (t)-class words surfacing with [kt] are given in Table 5.5. Note that modern

Table 5.5: Instances of intervocalic [kt]; (a): Female [kt] data; (b): Male [kt] data

(a)

Female: Instances of [kt]	Interview (t)	Conversation (t)
Young A	0	4
Young B	0	6
Middle A	0	3
Middle B	0	4
Older A	0	6
Older B	0	7

(b)

Male: Instances of [kt]	Interview (t)	Conversation (t)
Young A	0	10
Young B	0	6
Middle A	0	9
Middle B	0	11
Older A	5	4
Older B	8	4

(d)-class words are never subject to this breaking.

A further explanation to this phenomenon also involves a 'compromise' of sorts. While Veith's account is purely geographical in nature, Andersen (1988:65) presents a historical explanation rooted in the preservation of syllable structure. Though Andersen does not specifically mention Bitburger Platt, he describes intrusive consonants occurring in similar environments in other Germanic (and non-Germanic) languages and dialects. These instances categorically involve the compression of a long vowel or diphthong and the subsequent creation of a consonant that did not previously exist.

The reason for these *parasitic consonants*, according to Andersen, is to maintain the weight of a heavy syllable. The aforementioned long vowels and diphthongs, which

always seem to be historically present in these instances, constituted the nuclei of heavy syllables. At some point in history, these long vowels and diphthongs underwent compression and respectively lost their length or offglide. Subsequently, the energy in the second mora was transformed into a consonant immediately preceding the onset of the following syllable.[24] This accounts for the situation in question here: all Standard German cognates to the Bitburger Platt words with this phenomenon (and, more importantly, their historical forms) do indeed have heavy, open syllables (e.g. WGmc. [*vi:ter] > Std. [vaitə^{v}] vs. Bit. [vɛktə^{v}]).

If the Cologne basin and northern Eifel have the simplex [k] in the environment in question as the language atlases report, then at one time the entire Rhineland from Bitburg to Cologne likely had a [kt] cluster. Over time, most of the dialects around Cologne would have simplified this to a [k], and this simplification spread through nearly all of the territory, including most of the northern Eifel. Today's [kt] in Bitburg is thus not a reactionary creation to compromise for the northern velar and southern alveolar forms, but rather a remnant of something that was once much more widespread.

Returning to the present study, this nonstandard feature is seen across all generations and both genders in conversational speech, while in interview speech, none but the older men use it. This corroborates the aforementioned findings where older male speakers were shown to use nonstandard features indiscriminately in the interview and conversation.

In short, the results for closure duration themselves do not indicate a merger of

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[24] In other dialects, such as Hessian, monosyllabic words are reported to develop a parasitic consonant as well, such that *Eis* and *Faust* become [eks] and [fukst], respectively. Bitburger Platt monosyllabic words that exhibit this were not historically monosyllabic (e.g. *hiude* > [hɛkt] 'today', *liude* > [lɛkt] 'people').

intervocalic (d) and (t). The instances of lenition, however, do seem to show that (d) and (t) are treated distinctly in interview speech but similarly in conversation speech, which could possibly be a vestige of a time when the two sounds were in fact merged. The fact that only (t) is subject to the breaking into the [kt] sequence, on the other hand, would seem to indicate that this phenomenon developed before the two sounds would have otherwise merged.

5.3 Summary and Answers to Research Questions

In stem-initial position, the participants showed distinct VOT values for (d) and (t) in interview speech and merged (d-like) values in conversational speech; one of the older men was an exception, showing merged values in both his interview and conversation. Despite its internal problems, the harmonic difference parameter overall corroborates the VOT results, with the exception that *both* older male participants actually display statistically merged values. In any case, analysis of parameters yields the result one would expect: the Bitburger Platt feature of a merged (d) and (t) in conversational speech.

The intervocalic stops produced by these participants behave much differently from their stem-initial counterparts: the reflexes of the older sounds remain distinct in most speech. However, the manner in which they are articulated still includes some very nonstandard features: the deletion/lenition of (-d-) and the breaking of (-t-) into [-kt-]. Though this is not the merger that was the original target of my research (and is reported in nearby areas), these variants are in and of themselves highly divergent from Standard German, particularly (t) > [kt].

Recall that the research questions for this study are the following:

1. Do participants exhibit a fortis/lenis contrast for alveolar plosives in interview and/or conversation speech?

    a. In initial position, do they show a contrast in voice onset time and/or harmonic difference?

    b. In medial position, do they show a contrast in closure duration?

2. Can differences in the participants' speech (i.e. answers to question 1) be correlated with age and/or gender?

The first question, by its nature, requires several answers. These can be found in Table 5.6 (a-b), which summarize the data presented in this chapter. The answer to the second question becomes apparent in answering the first[25].

In the interview table, nearly every cell has a YES, while the conversation table has a NO in two thirds of the cells. Broadly stated, the answers are that, for stem-initial stops in interview speech, participants do make a distinction, while in conversation speech, they do not. The exceptions to the general patterns are what determine the answer to the second question. In three out of four of the possible cases, the older men do not conform to the pattern of using distinct (d) and (t) sounds in interview speech. It thus appears from this small sample that the participants' age and gender do correlate with their usage of standard and nonstandard variants (even if this correlation really only turns out to effect one of the six age/gender combinations).

In medial position, all participants keep the distinction in all situations. The

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[25] Recall that these are answers regarding individual *features*. All of these features together contribute dimensions to a contrast, and mismatches in some answers do not necessarily invalidate the answer to the question.

Table 5.6: Answers to research questions; (a): Interview speech; (b): Conversation speech

(a)

INTERVIEW: significant d/t differences?		Gender	
Parameter	Age	Male	Female
Voice onset time	Young	YES	YES
	Middle	YES	YES
	Older	One YES, one NO	YES
H1-H2	Young	One YES, one NO	YES
	Middle	YES	YES
	Older	NO	YES
Closure duration	Young	YES	YES
	Middle	YES	YES
	Older	YES	YES

(b)

CONVERSATION: significant d/t differences?		Gender	
Parameter	Age	Male	Female
Voice onset time	Young	NO	NO
	Middle	NO	NO
	Older	NO	NO
H1-H2	Young	One YES, one NO	NO
	Middle	NO	NO
	Older	NO	NO
Closure duration	Young	YES	YES
	Middle	YES	YES
	Older	YES	YES

generalizations about situation, age, and gender would thus appear not to apply here. However, the usage of the other nonstandard variants of (d) and (t) in this environment completes the picture. Table 5.7 (a-b) summarizes the participants' lenition and deletion of (d) and (t), as well as the breaking into [kt]. Note that the cells where (d) intersects with [kt] are shaded, as this variant does not occur with this word class.

Overall, participants prefer more standard variants in interview speech, evidenced by the prevalence of 'None' in the table. However, the matter of which variants were

Table 5.7: Intervocalic nonstandard variants; (a): Interview speech; (b): Conversation speech

(a)

INTERVIEW: instances of nonstandard variants		Gender			
	Age	Male		Female	
		d	t	d	t
Lenition	Young	10	None	3	None
	Middle	3	None	5	None
	Older	9	6	2	None
Deletion	Young	5	None	4	None
	Middle	None	None	None	None
	Older	5	4	1	None
Breaking into [kt]	Young		None		None
	Middle		None		None
	Older		13		None

(b)

CONVERSATION: instances of nonstandard variants		Gender			
	Age	Male		Female	
		d	t	d	t
Lenition	Young	4	2	7	3
	Middle	5	2	7	3
	Older	6	3	3	2
Deletion	Young	1	None	None	None
	Middle	4	None	2	None
	Older	3	3	1	None
Breaking into [kt]	Young		16		10
	Middle		20		7
	Older		8		13

used is a bit more complex. Lenition of (d) was the most common nonstandard variant in terms of the number of participants who exhibited it: it shows up in all possible cells, interview and conversation. Lenition of (t) occurred in all groups in the conversation, but only in older men in the interview. Deletion of (d) was far more common than deletion of (t); the latter never occurring in women's speech. The [kt] variant of (t) occurred in all

participants' conversations, but only in the older men's interviews, rounding out the trend seen throughout this chapter: the older men use the nonstandard Bitburger Platt variants almost categorically. In sum, while the original experiment did not yield any diverse results, closer investigation of some of the variants of medial (d) and (t) has shown there to be a trend similar to the previous two parameters: a clear interview/conversation divide among all participants except the older men.

In this chapter, we have seen the results and statistical analyses for the acoustic parameters investigated in this study. It has been shown that, with the exception of older men, nearly all participants tend to use standard variants of (d) and (t) in interview speech, while nonstandard variants of these sounds are mostly confined to conversational speech. In the next chapter, I discuss some of the implications of these results and conclude with some suggestions for future research.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

In this chapter, I discuss the significance of the results and of the study in general. I begin with a discussion of the results and what conclusions may be drawn from them, including a note on the community's state of affairs. Next, I present the implications this study has for the fields of dialectology and sociolinguistics and discuss its successes and shortcomings, as well as how the latter can be addressed. Finally, I discuss additional linguistic phenomena in this community that warrant further research, bringing the paper to a close.

6.1 Conclusions from Study

6.1.1 Recapitulation and significance of results

In terms of the quantitative data analyzed in Chapter 5, the patterns exhibited by this cohort of participants can only speak for the participants themselves; statistically, we cannot draw definitive conclusions about the community of Wiersdorf by examining twelve people, much less the greater Bitburg area, as noted in Chapter 3. However, the information gathered and analyzed here is nevertheless of great use for other purposes, as I illustrate below.

Recall from the results that in initial-position, all participants (but for one older

male) exhibited distinct VOT values for (d) and (t) in interview speech. In conversational speech, however, the participants categorically produced merged values. Despite one inconsistency (Young male A) and the data exclusions in some women for the secondary parameter (H1-H2), those results largely mirror the VOT ones: interview values are distinct, while conversation values are merged (again, older males were the exception, this time with both showing nonsignificant differences in both speech situations). Thus, we can say definitively that these twelve participants (with the exception of the older males) use the distinct Standard German variants in interview speech and the merged Bitburger Platt ones when conversing with friends or family.

For (d) and (t) in intervocalic position, the initial experiment on the parameter of closure duration indicated that all participants – without exception – consistently pronounced (t) with significantly longer closures (t) than (d). In the absence of other evidence, the question of an intervocalic merger seems settled: the merger affecting initials does not apply to medials for these participants. However, the matter of intervocalic stops does not end here; while there is no merger to speak of, a host of other nonstandard variants for these sounds can be found in this environment.

The first type of nonstandard medial variant discussed included lenition and deletion of (d) and (t). All participants, regardless of age, gender, or situation, exhibited deleted or weakened intervocalic (d) variants, mostly in function words. (t), on the other hand, was never subject to lenitions in interview speech except in the older men, but lenitions did occur for most speakers in the conversation. Outright deletions of (t) occurred only in the older men.

Recall that intervocalic (t) was also subject to a 'breaking' phenomenon, in which

this segment surfaced as [kt]. This variant is almost entirely absent from the interviews, but is found in all participants' conversation speech. Once again, older men are the exceptions, indiscriminately using this variant in both their interviews and conversation.

There are three major conclusions that one can draw from these results. First, these twelve participants all retain nonstandard (Bitburger Platt) features in at least one of the two speech situations. While the alveolar plosives were the focus of this study, they were by no means the only indication of whether the participant was speaking standard-like or Platt-like speech: numerous phonological, morphological, lexical, and syntactic differences from Standard German (discussed below in 6.3) can be heard in all of these participants' conversational speech (and the interview speech of the two older men). For example, an analysis of one particular nonstandard short-ɪ variant (lowering of *ɪ to [a]) found the domains thereof to be analogous to those of the aforementioned plosives. These variants are highly divergent from Standard German and would not be found in a regional, colloquial nonstandard variety of German (as opposed to, say, using *dat* instead of *das*, which does show up in colloquial nonstandard varieties in Western Germany). The takeaway from this is that the Bitburger Platt basilect is still frequently used in this community by multiple generations.

The second conclusion we can draw from these results is that, with the exception of the older men, these participants seemed to have very specific norms dictating when they considered it appropriate to use Standard German and Bitburger Platt. Aside from the results in the previous chapter, which do show very different patterns in interview and conversational speech, some qualitative data must be brought to light here as well. In their interviews, all participants were asked questions specifically addressing their use of

Bitburger Platt in various scenarios (e.g. at the bank, in a supermarket, with the local priest, etc.). While their answers differed from each other slightly for some circumstances, all claimed that they would use Standard German with somebody they knew not to be from the village. When asked how they would speak to person they didn't know at all, the consensus was that they would at least initiate contact in Standard German before changing over.

Given the study's results, which showed the older men's interview speech to contain a significant number Bitburger Platt features, the question arises as to why these men did not follow the pattern everyone else seemed to. All other participants used Standard German in their interviews with me as they claimed they would do with any outsider, while the older men exhibited more Platt-like speech, despite the fact that I asked my interview questions in Standard German.

A number of plausible explanations for this exist. First, it may well have been the case that these two men were not fluent in Standard German. Though this is becoming less frequent in today's society, their age and previous professions (one a farmer, the other a bread delivery man) do fit the demographics of people who might have less need to venture far from their home village (or interact with people from elsewhere), where their vernacular would not be easily understood. Several of my participants claim to have learned Standard German as a second language later in their childhood, and perhaps these two men simply ceased to be active users of standard-like speech later in life and simply felt more comfortable conducting the interviews in their native dialect.

Another explanation is that they were intentionally using the local dialect (even though I had never specifically asked them to). As everyone knew I was researching their

language, it is entirely possible that these older men were engaging in *performance speech*, which, according to Schilling-Estes (1998), should be treated as an entirely different register. Schilling-Estes' study on Ocracoke Island, located in the Outer Banks of North Carolina, found that visitors admire the island's dialect and that the locals, who are aware of this fact, often intentionally use words and phrases accentuating some of their unique features when speaking with patrons or customers they know to be outsiders. While this possibility must at least be considered, it seems less plausible than the previous one, given that such performance speech, in my experience, tends to focus heavily on specific lexical items. In my own interviews (and when simply conversing during down time), participants would often bring up the plethora of French words in the Bitburger Platt vocabulary.

While the exact reasons for the older men's different behavior cannot be determined with certainty, their less-standardized speech does corroborate what many studies in dialectology have found to be to be typical of nonmobile, older, rural males (called NORMs by Chambers and Trudgill, 1980). While the field as a whole has largely abandoned the investigating the speech of solely this demographic, the older men investigated here do indeed appear to fit the established expectations for their group. The three most significant findings, in any case, are the following:

1. All participants used Bitburger Platt features when conversing with a close friend or family member.
2. Nearly all participants used speech with the features of Standard German (or a colloquial standard/regiolect variety) when speaking with me, an outsider;
3. Older men used Bitburger Platt with in both circumstances.

We will return to some of the implications of the third point in particular below in 6.1.2. Having discussed the participants at length, let us now consider these results under the microscope of contemporary linguistic theory.

6.1.2 Diglossia vs. diaglossia

Recall that in Chapter 2 we briefly touched on the problematic subject of diglossia. The first (and key) tenet of diglossia, according to Ferguson (1959), is that there are two separate language varieties whose domains are in complimentary distribution. The High and Low varieties in question are often different enough to constitute two different languages: there is little to no mutual intelligibility. Some language groups in Europe, including Greek and German, were long thought to exemplify this phenomenon, and the fact that most participants in this study have consistent usage of standard variants in interview speech and nonstandard variants in conversational speech certainly appears to indicate that there are two distinct language varieties used in different situations. However, the concept of diglossia also hinges on *prestige*: the High variety (in this case, Standard German) is meant to be what Gee (1989) would call a *dominant discourse*, a language variety one must fluently speak in order to attain 'social goods' (e.g. money, positions, power, etc.).

The overall trend during the past few centuries has undoubtedly been in a 'more standard' direction, and several participants do report being told to speak Standard German with their children during the 1970s, when the village schools were shut one-by-one and children began being bussed to larger schools in Bitburg. However, as substantiated by several participants, the attitude toward the 'Low' (supposedly non-

prestigious) variety is markedly different from what diglossia literature would suggest. All participants expressed pride in the Bitburger Platt language, one calling it an *Erkennungszeichen* 'badge, identification'. In modern-day Germany, where many local basilectal varieties are critically endangered, this sense of pride is not especially unique.

The notion of prestige as a determining factor in language use has been largely abandoned, foremost by Milroy and Milroy (1985), who found that the speech in contemporary urban English-speaking environments is certainly not standard, nor even a 'modified' standard, but rather a modification of vernacular forms. Moreover, prestige can be subjectively attached to any variety, including one that conflicts with the standard, and the social class distinctions once thought to be so prominent in shaping speech may in fact not be. Milroy, Milroy, and Hartley (1994) found that gender was a major factor in determining the emergence or introduction of new favored forms, including nonstandard ones such as (t)-glottalization which, when adopted by women, was suddenly seen to have a notion of prestige attached to it.

The situation in Wiersdorf and other communities around Bitburg would probably have been called diglossic under the lens of the older theory. The data from the study show a clear separation of two sound patterns, and the supplemental information gathered from my interviews and personal observations suggests that this community actively uses two very distinct German varieties. However, the fact that these varieties are distinct does not mean that one is necessarily 'true' Standard German, nor does it mean that these are the only two varieties the participants actively use.

The variables selected for this (or any) study, while certainly diagnostic of two different varieties, might still belie the actual situation. While most participants did not

use the basilectal variety spoken in the area with me in interview speech, their interviews nevertheless contained many variants more typical of the regiolectal speech discussed in Chapter 2, such as the pronunciation of *das* and *auf* as *dat* and *op* ('that' and 'up/on'), and the usage of *für…zu* instead of *um…zu* ('in order to…'). Thus, despite using two markedly different language varieties in interview and conversational speech (and the fact that some participants outright told me that they view them as two separate varieties with nothing in between), participants did in fact use a speech variety between the Standard and basilect.

Auer (2005) contrasts the term *di-glossia* with *dia-glossia*, where the latter describes a fluid continuum between basilect and Standard. In line with contemporary theory, he argues that the present situation in much of Europe involves a movement displayed in Figure 6.1, a diagram analogous to the one from König (2010) in Chapter 2. The only difference is that this one juxtaposes a diglossic and a diaglossic model. As previously discussed, Lenz (2003), Schmidt (2010), and Schmidt and Herrgen (2011), among others, have noted the increasing prominence and importance of regiolectal speech in recent times. Recall from Chapter 2 that there is a continuum not only between basilectal and Standard German, but also in the speakers' subjective evaluations of their own language use.

The key difference between the norms of Bitburg's satellite villages and the norms of German varieties in other areas may not be simply that the basilectal variety has been kept intact, but also be that they lie at different steps along the subjective evaluation continuum, redisplayed in Table 6.1 (Lenz in Schmidt, 2010:306).

Note that in the columns for steps two and three, I have inserted the likely

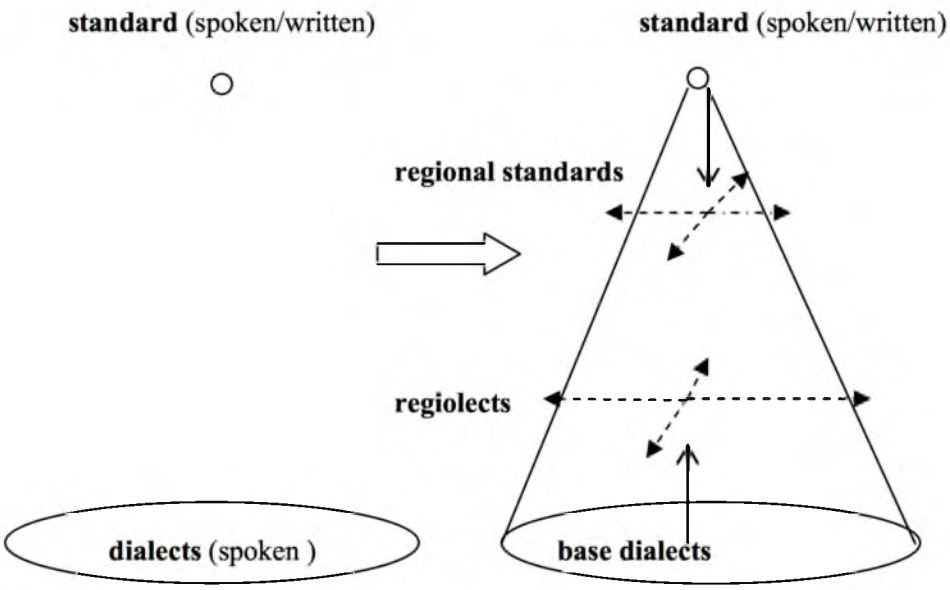

Figure 6.1: Shift from *diglossic* to *diaglossic* situation, modified from Auer (2005) and König (2010).

Table 6.1: Objective/subjective structuring in Bitburg

Objective structuring		**Subjective structuring (Informants' labels)**			
		Step 1	Step 2	Step 3	Step 4
STANDARD VARIETY		'proper Standard German'	'proper Standard German'	'proper Standard German'	'Standard German'
REGIOELCT	Regional Accent	'our Standard German'	'our best Standard German'	'our best Standard German'	'colloquial language'
	Upper Regional Nonstandard		'our normal Standard German'	'colloquial language'	
	Lower Regional Nonstandard	OLDER MEN		OTHERS	

positions of the participants analyzed in the present study. Another possible explanation of the older men's seemingly vernacular speech lies in this chart: they did in fact view the variety they used when conversing with me as their "Standard German", massive differences notwithstanding. Other participants likely ranged somewhere between steps three or four, given their aforementioned use of nonstandard variants more typically found in regiolectal speech, but their absence of the (d)/(t) merger found in the basilect.

Perhaps a more solid confirmation of where the other speakers lie in this evaluation continuum comes from the speakers themselves. When specifically asked what the word *Umgangssprache* 'colloquial language' meant, several participants declared that Bitburger Platt *was* Umgangssprache. Though this is partially a matter of semantics, the *objective* structuring presented in Barbour (1990), among others, clearly has basilectal speech as distinct from *Umgangssprache*.

To further illustrate the subjective nature of these terms, Schmidt and Herrgen point to Steiner's (1994) study of postal workers in Mainz, whose speech was recorded in four situations: an interview with a researcher, a conversation with a co-worker, and a task specifically aimed to elicit deep dialectal speech, and another similar one to elicit Standard German. All four tasks contained nonstandard features, though the largest divide was not between the interview and conversation: it was between the interview and Standard German task, the latter of which averaged phonetically closest to Standard German, but still did not truly qualify as such, according to Steiner's criteria.

6.1.3 Status of Bitburger Platt and community

The participants in this study all had in common that they grew up in this village, moved out for a time to study or complete their mandatory conscription in the armed forces, and then chose to move back to the area. To my knowledge, most of the locals have similar life stories, having lived elsewhere only briefly, if ever. However, other residents of this community have different backgrounds, and an increasing number of them are from elsewhere. Some are from Luxembourg or neighboring German provinces, but many others hail from former Warsaw Pact countries and the Middle East; there are even retired American service members who have expatriated to Germany, having married Germans while stationed in Bitburg many years previously.

When asked about this subject in the interviews, many of my participants (particularly the middle-aged and younger ones) reported having frequent interactions with these newcomers, and that the language used in these situations was almost always Standard German (or even English, in some cases). If a Platt-speaking local is conversing with a person from elsewhere in Germany, it is easier for both parties to arrive at their ends by using a lingua franca they've both been using for most of their lives, rather than to have one struggle to articulate him or herself in a new language. It is even less likely that a foreigner would be expected to learn Bitburger Platt. Immigrants are already under tremendous pressure to learn Standard German (without which they would have a very difficult time succeeding), and locals once again see the situation as easier for all involved if they simply revert to Standard German.

Along with the increasing heterogeneity of the population, another matter to consider is the current situation with the youngest children and their parents. Children

under 18 were excluded from participation in this study due to the bureaucratic difficulties involved in conducting research with minors. Of my participants who had children, about half reported speaking Platt with them. The remainder of the participants, who spoke Standard German with their children, reported doing so because they had a partner who did not speak Platt. As the number of people marrying outside the area has grown substantially in the past half century (and will undoubtedly continue to grow with further integration into Germany), one might be tempted to write the basilectal language off as moribund without further discussion. My interviews and observations in the community, however, have revealed a handful of stark counterexamples.

Perhaps the most inspiring of these was a 40-year-old participant (not included in the twelve analyzed here) whose parents forbade him from using Platt in his childhood and discouraged him from so much as associating with those who spoke it. In his teens, he went behind their backs and learned it from his schoolmates. He and his partner have chosen to raise their daughter speaking Platt. Another situation involved a husband and wife (both of them participants, interviewed separately) who had at first raised their two boys speaking Standard German. This resulted in a rift in their extended families, which eventually came to a turning point when it was discovered that the boys had great difficulty communicating with their grandparents. The parents made a decision to switch over to Platt in their household. While this did come with some difficulty at first, both sons are now active users of the language.

While there are more stories such as these, and while usage of Bitburger Platt in this area is still quite prevalent, the language's future is by no means secure. There are many factors working against the continued usage of Bitburger Platt, even in the home, as

noted in the earlier lines of this section. The state-sponsored educational forces that actively sought to wipe out several languages and dialects in the last century may have failed to do so in the Bitburg area, but Bitburg's change from an agrarian community to one more reliant on modern services, along with the change in the makeup of the population, may well have the same result. The rise of regiolectal speech, a colloquial language that blends nonstandard features of local dialects with features of Standard German (to varying degrees), might be taken as a sign that the dialect is indeed perishing. On the other hand, one might also paradoxically argue that this is a sensible way of retaining a sense of identity, discussed below.

6.2 Reflection and Implications for Future Research

The conclusions one can draw from this study are manifold. Having discussed the results and their implications for the speech community, I will now elaborate on what the field of linguistics stands to take from this. What follows here is an evaluation of the study itself – arranged chronologically – where I reflect on the ways in which the techniques were successful in achieving their ends and the ways in which they were not, as well as what improvements could be made in the future to address the latter aspects. Much here has been discussed at some length in Chapter 4; it is revisited here with a more critical perspective. To conclude, I suggest and discuss additional variables that future research of the Bitburg area might do well to consider.

6.2.1 Successes and shortcomings with fieldwork

The recruitment and selection of participants was conducted primarily with the help of a member of the family hosting me. As is often the case in smaller villages, the news of my activities spread very quickly, and most people already knew what I was doing there before I had even begun fieldwork. While this was of great help in setting up and completing the fieldwork itself, it is not implausible that this could also have affected the participant makeup and the results. While this problem is acknowledged, one must consider whether such a familiarity among many of the participants in a town as small as Wiersdorf (and the other nearby villages) is avoidable at all.

The division of participants by gender and age is a well-established norm in sociolinguistics, and both dimensions proved to be important in finding differences in participants (though these were largely confined to the older group). More specific to this study (though not unique to it) was the recording of participants in two situations. As an investigational technique, this proved successful in eliciting two different language varieties from nearly all of the speakers. Besch et al. (1981-3), Steiner (1994), and others have used this technique in the past, with subtle differences.

An admitted limitation to this is that, despite the removal of the investigator from the situation, the participants are still aware that they are being recorded. It may thus be argued that they are not truly speaking as they would in an unmonitored state. Short of surreptitious recording, which is not recommended for a host of reasons, there is no way I am aware of to avoid this problem; any input from the sociolinguistic community is welcome on this matter.

The fact that many community members had known me for close to twenty-five

years before the 2010 fieldwork may lead some to question whether I was truly the 'outsider' I purport to be throughout this work. It is true that my family maintains strong friendships with more than one family in Wiersdorf, and I am not an outsider to the same degree as others may be, which could cause the community members to feel more comfortable when talking to me, resulting in the presence of more vernacular features in their interviews. While this must certainly be taken into account when considering the results, the fact remains that I am not a native speaker of *any* variety of German and have spent the vast majority of my life outside of this community, placing me safely in the category of outsiders.

Upon securing an interview and arriving to conduct it, younger and middle-aged participants almost always asked their family members to give us privacy, but with the older participants, their spouses often made it quite clear that they would feel most comfortable chaperoning the interview or interviewing together. While the consent forms were broad enough to do this legitimately, it often produced less-than-ideal results. For example, it happened more than once that the person I had originally planned on interviewing ended up speaking very little because the other person would constantly talk over them, correct them, or dominate the conversation in general. Such interviews (and the ensuing conversations) were not included in the twelve analyzed in this study.

This issue is inherent to sociolinguistic recording situations: the participants' wishes must be respected, and to pressure them to engage in something they have already expressed discomfort in doing would be a violation not just of research protocol, but social protocol in general. It takes little imagination to envision the potential community-wide fallout this would incur. For this reason, the participants' wishes were always

respected, regardless of whether or not the recording would eventually be usable. Even if the recording was never analyzed, such interviews often proved valuable in learning about the history of the community and getting to know its members better.

The recording conditions themselves were occasionally part of the problem. The majority of the sessions were conducted indoors, most often at the kitchen or dining room table, as coffee or tea was offered in practically every instance. However, some of the participants insisted on sitting outdoors, where noises from the road, farm animals, and wind would obscure our voices. Even when all was quiet and the wind was was still, the recordings conducted outdoors always turned out to be more difficult to hear than those conducted indoors, due to the lack of reinforcing echoes from walls.

It was somewhat less problematic than with the previous issue to try to argue for a more ideal recording spot, but occasionally the outdoor environment prevailed because the participants insisted on sitting there (at which point I considered it unwise to push the matter further), or an outdoor session was simply the only option for one reason or another (e.g. the participants had just succeeded in getting a child to go to sleep). Though some modifications were successful in reducing or eliminating some problems, such as placing the recording device under a serviette to minimize wind interference, there were a handful of interviews and conversations that ultimately had to be excluded from analysis because of this[26].

In future research, these two matters could be circumvented by informing the

[26] Note that Middle-aged female A's conversation, which contained an inordinately high number of tokens where the harmonic difference was unanalyzable, was actually a result of such an outdoor recording; these data were utilized because the others that could potentially have filled this cell had to be excluded for other more serious matters (e.g. it was revealed that a participant was actually from the Saarland, which, although geographically close, is linguistically distant).

participants well in advance what is necessary for the recording sessions. Although I was able to secure a sufficient number of usable recordings within my allotted time in the country, under ideal circumstances, one probably could have attained several more. Future adjustments could include a conversation with prospective participants well in advance of the recording session in which all of the necessary conditions are expressed to them, at which point the participant and researcher can hopefully agree to some arrangements for a session that is more conducive.

In short, many of the problems associated with this study are simply inherent to sociolinguistic work: the more one tries to control a situation, the less natural it becomes. The techniques employed in this study proved successful overall in serving their intended purpose. Success notwithstanding, there are most definitely some modifications (not limited to those considered above) that could improve the overall quality and quantity of the data gathered.

6.2.2 Lessons from analysis

The actual analysis of the data gathered is at least in part connected to the conditions and quality of the recordings. In determining which recordings were most suitable to use, many decisions had to be made. Some of these decisions were straightforward choices that were only logical, while others might seem (and truthfully were) somewhat arbitrary.

The ultimate selection of twelve participants, such that six age/gender cells were filled with two participants each, involved the exclusion of over half of the interviews and conversations recorded. Many of these were excluded for reasons listed above (e.g.

bad recordings, revelations about a participant's background that revealed incompatibilities, etc.), but others were simply not included because their particular cell had a disproportionately large number of participants.

Obviously, having greater number of participants is preferable when conducting sociolinguistic work. Statistical generalizations to the larger community, however, would never have been possible with this corpus, even if all participants' data had been analyzed (Milroy and Gordon (2003) recommend at least thirty participants per cell). Even if the required number of participants had been present, the in-depth nature of the analysis would have made such a task unfeasible without assistance.

VOT proved (as it has in other studies on German, many times over) to be a critical parameter distinguishing fortis and lenis stops in these participants' speech; the most conclusive results in this study were demonstrated with VOT. Future studies investigating this contrast should undoubtedly continue to include this parameter. In addition to being a good indicator of the fortis/lenis contrast, VOT is also fairly straightforward to measure when compared to harmonic difference, the other parameter included in this study for pre-stressed consonants.

Medially, the usefulness of the closure duration parameter might be called into question here, given the prevalence of lenition, deletion, and consonant breaking that occurred in this environment. I would argue the opposite: for the tokens that surfaced as a full closure in medial environments, the data here show that expected merger either did not take place or has been reversed. In any case, the lack of a merger in medial environments as opposed to initial environments was substantiated both by differing patterns in the lenition/deletion/breaking phenomena, *as well as* the closure duration data.

Although much etymological work was conducted to determine the origin of the words and ensure they were not loans, a more thorough categorization of the lexemes in the medial environment might have revealed more about which of them are subject to the other phenomena, and to detect if perhaps there is some variability in the categories between age groups or gender. While such an investigation was not within the scope of this study, plans are currently underway to address this matter in forthcoming work.

6.2.3 Other investigable variables

The justification for choosing the (d) and (t) variables has been discussed at length in previous chapters, and the results proved different patterns of usage of these variables between interview and conversational speech. Though I have called for further investigations of these variables, there are several other nonstandard phonological, morphological, and lexical variables – both innovations and retentions – that I wish to point out as possible candidates for a large-scale study.

In the phonological category, another variable I have personally examined from this corpus as a side project is the lowering of *ɪ to [a] in words such as *mit* 'with' and *Winter* 'id.', briefly mentioned above in 6.1.1. Apart from the variability of this sound, the history of its lowering is also disputed. As an extremely common token that is found throughout the lexicon (i.e. not limited to one or two function words) and acoustically very different from the standard variant, it is a salient marker of dialecticity found only in Luxemburg and neighboring areas of Germany that once belonged to the Grand Duchy (Veith, 1984-99).

Another salient characteristic of local vernacular speech is the realization of

Standard medial and final (b) as the spirants [v] and [f], respectively, resulting in forms such as *liɛve* 'Std. Leben 'life' and *bloof* 'Std. blieb 'stayed'. This is actually a retention as opposed to an innovation, visible in Modern Standard Dutch and English (as the gloss on the first example shows). Despite its large areal distribution, which actually covers much of High German[27], it is not generally accepted in standard or colloquial standard speech. As with the lowered *ɪ, this sound is found throughout the lexicon and would make an excellent variable for sociolinguistic research.

A third phonological variable worth investigating is a morphophonemic process called the *Eifel Regel*, a French-like liaison that leads to the deletion of final (n) segments. Crucially, this only happens if the following segment is not a coronal, a vowel, or an [h]. As an example, observe the following two masculine nouns, [apel] 'apple' and [bɛ^{ᵝ}ʃ] 'mountain', when the determiner *den* is added[28]. The former surfaces as [den apəl], but the latter, [də bɛ^{ᵝ}ʃ]. Not surprisingly, this process is a part of Standard Luxembourgisch, and practical grammars describe it in detail; it is also reflected in writing, rather than simply the speech.

A well-known isogloss dividing the northern '*er* pronouns' and the southern '*he* pronouns' pronouns dives south just east of Bitburg, placing the research area within the latter zone. The main differences lie in the third person singular and plural: the masculine singular is pronounced [he] instead of [e^{ᵝ}], and in the dative, it is pronounced [him] instead of [i:m]; the third person singular feminine pronoun has split into [hat], the

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[27] In some High German varieties, the [v] pronunciation has actually come from a *re*-spirantization of [b], which had previously undergone fortition (Hornung, 2000).
[28] Unlike Standard German, the determiner *den* is used for both nominative and accusative masculine; the case distinction in determiners is lost in Bitburger Platt and Luxembourgisch. Alternation between [də] and [den] is thus conditioned phonologically, not morphologically.

common form, which has the dative [him] and the genitive [seŋ-], and [si:], a respectful form identical to Standard German, which has the dative and genitive [(h)ir/hir-]; the third person plural dative is [hine(n)], once again bearing the northern [h-], and possessive is [hiR-] instead of [iR-]. Usage of the 'he pronouns' in this area is a characteristic of basilectal speech and would make excellent variables of study, given the prevalence of pronouns in everyday speech.

Another local characteristic largely confined to the current and former territory of Luxembourg is the absence of the verb *werden* 'to become', an essential element in passive constructions and the future tense. For passive constructions in Bitburger Platt and Luxembourgisch, *werden* is supplanted with a verb written in Luxembourgisch as <*gënn*> (pronounced [gœn]). This verb is conjugated as a hybrid between *gehen* 'to go' and *geben* 'to give', yielding sentences such as the following: *Frektes gitt be ies kee Fleesch gess* (Std. Freitags wird bei uns kein Fleisch gegessen) 'No meat is eaten at our place on Friday'; *He guv gsinn* (Std. Er wurde gesehen) 'He was seen.' It is also used to form the existential: *Et gitt/guv*___ (es gibt/gab___) 'There is/are___.' These constructions are used so prevalently in German that any interviews or conversations would undoubtedly contain many instances of them.

These five characteristics of speech in the Bitburg area represent only a fraction of the many differences between Standard German and local vernacular speech. A host of other vocalic, consonantal, prosodic, morphological, and lexical differences are present that cannot be listed here for brevity's sake. Future studies investigating any of these phenomena would be welcome contributions to our understanding of the linguistic situation in and around Bitburg.

6.3 Conclusion

This study has hypothesized, tested, and confirmed a correlation between speech situation and these participants' usage of standard vs. nonstandard variants of German (d) and (t). While there is much to be learned from this, there is paradoxically much more that has not been investigated. It is my hope, as stated in the introduction, that this study is only one of many that will eventually be conducted on this fascinating variety of German.

My history of living in, visiting, and eventually conducting research in this area has given me an understanding of some of the history and inner workings in this community that might have gone unnoticed by others. I would nevertheless point out that there are countless dynamics and aspects of the community that I am not fully aware of, and will perhaps never be. In several interviews, participants would offhandedly point out a river, a hill, or even a street that they themselves knew to be an isogloss (though they would never specifically use this term). A comprehensive documentation of these, as well as information on which of these appear to be fading, solidifying, or moving, would be a most welcome contribution.

The great linguistic diversity in this area may not continue as we currently know it. However, if the community does indeed undergo language shift, it is by no means a foregone conclusion that the residents are shifting to Standard German. Even if the overall direction of the shift is toward a variety that is more mutually intelligible with Standard German, it is likely to be a regiolectal variety. Discussed several times in this study, these regiolects bear an amalgamation of nonstandard features common to a larger area, and several of Bitburger Platt's features will likely survive.

An even greater number of these nonstandard features could survive if Bitburg were to become a part of the Luxembourgisch regiolect (a possibility we have not yet entertained, in light of the different statuses the vernaculars have in the two countries (discussed in Chapter 2)). Bitburg was a part of Luxembourg as recently as 1815 (Meyers, 1969), and as section 6.2.3 indicates, many of the linguistic features typical of Bitburger Platt are found in Luxembourg as well. Given the political and linguistic fluidity of the area, nothing can be safely predicted: the community's future can only be revealed with further research as time passes.

In conclusion, the participants of this study generally expressed a greater pride in their local area than they did in their national identity, and were very aware of the similarities their basilect has with Luxembourgisch. One participant had the following optimistic words: "Maybe [the dialect] won't be lost so quickly here, because we're so close to Luxembourg… and our Platt and Luxemburgisch: they're related. So maybe this gives our dialect a bit of a chance" (my translation).

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